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U.S. DEPARTMENT OF COMMERCE / National Bureau of Standards

Model Documents for the Evaluation, Approval, and Inspection of Manufactured Buildings

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NBS Building Science Series

Model Documents for the Evaluation, Approval, and Inspection of Manufactured Buildings

P. W. Cooke, R. D. Dikkers,
H. R. Trechsel, H. K. Tejuja, and
L. P. Zelenka

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PREFACE

The building regulatory process is a lengthy one, differing greatly from state-to-state. It was long recognized that a program was needed in the United States to facilitate interstate acceptance of manufactured buildings, factory pre-assembled building components, and systems to enable manufacturers to market on a regional or national basis. In other words, a manufacturer should be able to market in all States if he is able to market in one State. Similar forms, methods and criteria should exist in all market areas, thus reducing the time required for acceptance by the manufacturers as well as the individual States.

In 1971 the Executive Office of the President asked the National Bureau of Standards (NBS) to develop specific programs which would assist in removing or reducing barriers created by the building regulatory process. In April of 1971, at the Fourth Annual Meeting of the National Conference of States on Building Codes and Standards (NCSBCS), the State delegates approved a resolution which recommended the early implementation of an interstate innovative evaluation system and also that NBS be requested to undertake development of such a system.

In response to both of these requests, the Coordinated Evaluation System (CES) project idea was submitted to the Executive Office as a needed program to help alleviate the barriers.

In November 1971, the CES project was established in the Building Research Division,* Institute for Applied Technology. Its purpose was to develop, in conjunction with the State governments, model informational documentation to serve the needs of many State regulatory agencies to minimize the duplications and delays experienced by the producer in obtaining regulatory approvals.

This undertaking resulted in a multi-faceted program covering research in many areas -- manufactured buildings, mobile homes and statewide building code programs. In addition to an interdisciplinary NBS project staff working solely on this program, contracts were let for much of the background survey work to eleven consulting architectural and engineering firms and various universities.

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*In July 1972, the Building Research Division was reorganized into The Center for Building Technology.

After a draft review in April 1973 by a group of consultants* composed of representatives of State and local building officials, design professionals, third-party evaluation and inspection agencies, and industrialized building manufacturers; the results of these studies were published in September 1973 as a four-volume preliminary report entitled, "Model Documentation for the Evaluation, Approval and Inspection of Manufactured Buildings." The prelimimary version of the report was issued with the expressed intent of soliciting comments and suggestions so that more comprehensive and more generally applicable model documentation could be developed. This final report incorporates the various comments received and updates the report where necessary. The earlier four volume report has also been consolidated into a single publication.

The use of these documents was endorsed by the National Conference of States on Building Codes and Standards in 1974. Since that time, the operational concept of CES has been adopted in several State agencies involved in the regulation of manufactured buildings and/or mobile homes. Independent third-party evaluation agencies and manufactured building producers have also incorporated CES developed model documents into their activities relating to institutional evaluation and regulatory compliance assurance functions.

---

*The review was organized and chaired by Mr. John Dunlap, Consulting Engineer of Sacramento, California. The other consultants were:

Joseph Bartell, City of St. Petersburg (now with State of Virginia)
Jack Bono, Underwriters Laboratories, Inc.
Kern E. Church, State of North Carolina
Jasper Hawkins, Hawkins and Lindsey, Architects
James M. Hicks, State of California
Glendon R. Mayo, Consulting Engineer
J. Dillard Powell, Continental Homes
Ed Starostovic, Product Fabrication Service
Joseph Stein, City of New York (now with Tishman Research Corporation)
Steve Wilson, National Homes Corporation

The comments of the consultants were most helpful in developing the model documents contained in the preliminary report, and their valuable assistance is greatly appreciated and herewith acknowledged.

ABSTRACT

MODEL DOCUMENTS FOR THE EVALUATION, APPROVAL, AND INSPECTION OF MANUFACTURED BUILDINGS

P. W. Cooke, R. D. Dikkers, H. R. Trechsel, H. K. Tejuja, L. P. Zelenka

To assist the states in developing their building regulatory activities and functions, the Coordinated Evaluation System (CES) Project has defined and developed model informational documentation pertaining to the functional areas of (1) data submission, (2) evaluation, (3) approval, (4) compliance assurance, and (5) installation data.

This report gives the results of the project's investigations and presents sample model documents pertaining to manufactured buildings and building components. The model documentation is based on the Model Rules and Regulations for manufactured buildings developed by a Department of Commerce sponsored working task group, and the results of a comprehensive state-of-the-art study of most state building regulatory programs. The documentation presented covers all functional areas except owner information which is not usually subject to regulation. Emphasis was placed on developing documentation applicable primarily to one and two family detached dwellings.

Key words: building codes; certification; compliance assurance; evaluation; inspection; manufactured building; model documents; NCSBCS; standards; state regulation.

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1. INTRODUCTION

The conventional method of regulating building construction consists of determining code compliance prior to the start of construction by an evaluation of plans and specifications, and by periodic on-site inspections during construction. The on-site inspections are scheduled so that all major code related construction features can be viewed to determine their compliance with applicable codes and with the approved plans and specifications. For example, electrical wiring and conduits are inspected prior to wall finishing operations which would enclose such wiring and prevent its full inspection. In most states, both evaluation or plan review and inspections are performed by local enforcement agencies using locally adopted codes. Although not without problems, this building regulatory system has been found adequate for conventional on-site construction. However, this regulatory system has been proven to be a detriment to manufactured buildings because: (1) the differences in building codes from one locality to another and the requirement for local inspections in each municipality restrict the marketing areas for such buildings, thus preventing the manufacturers from taking full advantage of modern mass-production techniques; (2) in the case of "closed construction" (i.e., buildings or components manufactured in an off-site plant in such a manner that concealed parts or processes of manufacture can not be inspected at the building site without disassembly, damage, or destruction), the requirement for inspection by local inspectors is impractical: and (3) some local building codes are outdated and restrict the use of modern materials and construction methods particularly well suited to in-plant fabrication.

Over the past few years, efforts have been undertaken to alleviate the restrictions placed on manufactured buildings by the multiplicity of building codes and by the unsuitable regulatory processes used. The efforts by various organizations to develop model codes[1] and performance standards, and the recent trend towards state building codes are designed to reduce the number of codes to a manageable level, and to provide for the introduction and acceptance of novel materials and construction methods.

In recognition of the needs of the industry, many states have adopted legislation which provides for state-wide regulation of manufactured buildings and mobile homes [1][2][2] Although the various programs established by the states vary in many details, most programs require that manufactured buildings: (1) meet one of the model building codes, and that mobile homes meet the American National Standard Institute (ANSI) Standard A119.1 [2]; (2) provide for some form of pre-evaluation ("plan review"); (3) provide for in-plant inspections at the state level; and (4) further require that local jurisdictions must accept state labeled or certified manufactured building or mobile home units. The right to regulate zoning and similar aspects is reserved to the local jurisdiction. Local agencies are generally also required to inspect on-site installation of the units. Since technical requirements

[1] Uniform Building Code (International Conference of Building Officials), Basic Building Code (Building Officials and Code Administrators' International), Southern Standard Building Code (Southern Building Code Congress).

[2] Figures in brackets indicate the literature references at the end of this volume.

for most state programs for manufactured buildings and mobile homes are based on one of the nationally recognized model codes or standards, such states have provided a regulatory climate conducive to the continued industrialization of the building construction process within the limits of their territory. However, the full production and marketing potential of manufactured building and mobile home industries can not be realized unless some form of reciprocal regulation and acceptance of units among states is developed.

To provide a basis of such reciprocity, efforts by both the Council of American Building Officials and the Model Codes Standardization Council are under way to reduce unwarranted differences between the model codes. Department of Commerce (DOC) Special Working Groups consisting of representatives from industry and local, state, and federal agencies have developed "Model Acts" and "Model Rules and Regulations" pertaining to manufactured building and mobile home regulatory activities for the voluntary adoption by the states [4-6]. This model manufactured building legislation provides for:

- The establishment of a State Building Code Council to adopt and revise rules and regulations, and to adopt the standards and codes which are to form the technical basis for the regulatory activity.
- The preemption of local building codes whenever it has been certified that a manufacturer has met all state requirements (reserved to local regulation are zoning and land-use related items, as well as the inspection of all on-site work such as utility connections and foundation work).
- The approval, by the state administrative agency, of building systems and of compliance assurance programs (assuring that the units produced conform to the approved building system and to the Act and the Rules and Regulations).
- The certification of manufactured buildings and building components produced according to an approved building system and under an approved compliance assurance program.
- The granting of reciprocity to other states having substantially the same code, evaluation, and inspection requirements for approval and certification.
- The option for the state administrative agency to delegate evaluation, testing, and inspection functions to approved agencies which meet specified standards for independence of judgment, demonstrated reliability, and organizational and technical capabilities.

Although the adoption by the states of the Model Act and Model Rules and Regulations would provide a basis for reciprocity among the states, two additional elements in the regulatory field are necessary to establish full reciprocity: (1) a method or means of evaluating the qualifications of those state or private agencies which are responsible for evaluating and approving building systems and compliance assurance programs, and inspecting manufactured buildings; and (2) a set of model informational documents for use by the states, to aid in the establishment of a coordinated and uniform evaluation, approval and inspection system, and to provide the necessary and valid approval record for interstate reciprocity in the acceptance and regulation of manufactured buildings.

Recognizing the need for the above elements, the National Conference of States on Building Codes and Standards (NCSBCS), an organization of representative state building officials appointed by the Governors of their respective states, requested the National Bureau of Standards to develop criteria and methodology for the evaluation and accreditation of laboratories and other organizations active in the evaluation and certification process, and to develop a program that would provide the necessary documentation to serve as a base for an interstate evaluation system.

In response to these NCSBCS requests and with program support from the Executive Office of the President, the National Bureau of Standards developed and initiated two research projects, the Laboratory Evaluation and Accreditation Program (LEAP) and the Coordinated Evaluation System (CES) Project. The LEAP project was concerned with the development of criteria necessary for judging the capabilities of institutions (public or private) to perform the functions of engineering analysis or evaluation, testing, and compliance assurance (inspection) for manufactured buildings. LEAP also directed its attention to the methodology for examining such institutions for their capabilities. The CES project concerned itself with the documentation to be used by state and other agencies which regulate manufactured building construction.

2. COORDINATED EVALUATION SYSTEM (CES) PROJECT

The CES project was established in the Fall of 1971 with the objective to develop model informational documentation that will assist state building regulatory agencies in establishing a coordinated and uniform evaluation, approval, inspection, and certification system for manufactured buildings and building components. The CES project goals, tasks, and methods used are discussed in greater detail in the NBS Technical Note 775, "Coordinated Evaluation System (CES) Project - Model Documentation for Building Regulation."[1]

In addition to developing the model documents, and as a necessary first step in their preparation, the CES project staff also studied the then existing state-of-the-art in the area of building regulatory activities, particularly as it pertains to state programs and to manufactured buildings and mobile homes. The results of these state-of-the-art studies are given in separate publications[2][7].

This report discusses the major informational documents developed by the CES project staff, and contains sample model forms and model checklists for use in state regulatory programs for manufactured buildings and building components. It is hoped that these discussions and model documents will be useful to all those involved in the regulatory process: (1) to the responsible state building official by providing him with suggested administrative procedures, model forms, and checklists; (2) to the

local building inspector by defining his responsibility and indicating the meaning and value of labels, data plates, and approval documents; (3) to the evaluation and inspection agencies by giving sample checklists; (4) to the producer by giving him in advance a clear understanding of the regulatory process and of the administrative requirements he must meet; (5) to the owner by assuring that the manufactured building he acquires meets or exceeds the applicable codes and standards; and finally (6) to the general public by providing an efficient regulatory system designed to permit and even stimulate the use of productive and economical manufacturing processes, efficient materials, modern marketing techniques and distribution methods in the building and housing construction industry.

3. SCOPE OF CES MODEL INFORMATIONAL DOCUMENTATION

The CES model documents cover the entire state regulatory process of manufactured buildings and building components from the initiation of action by the manufacturer to the occupancy of the building, including:

- Preparation and submission of documents by the manufacturer for the purpose of obtaining approval of building systems and compliance assurance programs;
- Preliminary review to determine suitability for evaluation of the submission by the state administrative agency (or such other agency having been delegated the responsibility for the evaluation of building systems and compliance assurance programs);
- Evaluation of the submitted building system and compliance assurance program for the determination of compliance with all applicable codes, acts, and rules and regulations;
- Approval (or disapproval) of the building system and compliance assurance program;
- Certification of manufactured buildings or components which have been manufactured according to an approved building system and an approved compliance assurance program;
- Local enforcement. Although not a part of the state regulatory activity, a short discussion of the local building regulatory functions has been included in the CES model informational documentation since the local enforcement agency may be required to accept state certified manufactured buildings and components, and may be required to inspect and approve the on-site installation of the units.

Within the above scope, the following guidelines were used in the development of the CES documentation.

(1) The term "documentation" or "documents" as used in this report means not only the various forms, checklists, labels, and data plates used in the regulatory process, but also necessary commentary and administrative procedures.

(2) The documents are based on the regulatory process as contained in general terms in the Model Rules and Regulations and as described in Section 4 of this report.

(3) Where the Model Rules and Regulations appear to be open to different interpretations, the literal interpretation was used. Where necessary, a short commentary

was added to indicate the different interpretations and their possible influence on the documentation.

(4) Where the Model Rules and Regulations appear to be in conflict with some of the existing state regulatory programs, the requirements of the Model Rules and Regulations were followed. Where appropriate, such conflicts are discussed in the description of the regulatory process and in the commentary to the documents affected.

(5) Available time did not permit the considerations of all occupancies and types of construction. So as to be applicable in their present form to a majority of currently produced manufactured buildings, emphasis was placed on the requirements for one and two family housing and on conventional (but in-plant fabricated) wood construction.

(6) The general technical bases used for the development of the various checklists were the one and two Family Dwelling Code [8], the 1973 Accumulative Supplement to the One and Two Family Dwelling Code [9], and the National Electrical Code [10].

Because of the above considerations, the CES documentation was prepared to serve as a guide in developing the states' own forms, checklists, and administrative requirements. However, to promote a uniform approach that will aid in the interstate acceptance of manufactured buildings and components, it is suggested that the general format and content of the CES documentation be followed as closely as possible, and that only those changes and modifications be made which are in fact needed to adapt the documents to the requirements of any particular state's established administrative procedures, rules and regulations, mode of operation, and adopted relevant building and other codes.

4. REGULATORY PROCESS FOR MANUFACTURED BUILDINGS AND BUILDING COMPONENTS

4.1. Program Administration

Figure 1 shows the basic regulatory process for manufactured buildings as required by or implied in the Model Rules and Regulations, and identifies the major activities involved in this process: program administration, preparation and submission, preliminary review, evaluation, approval, fabrication and inspection, certification, transportation and handling, installation and occupancy. To preserve clarity and general application, the figure does not indicate every possible detail, or define every single document that may be involved in the process. Details are given in the process description herein and under the discussion of the documents included in Section 5 of this report. It is recognized that some existing state programs differ to greater or lesser degree from the process indicated, that the Model Rules and Regulations themselves appear to permit alternate steps in the regulatory process and in particular allow varying degrees of delegation of specific functions. However, to provide a common ground for the suggested CES documentation, the process as shown in this section was chosen as the basis for all the documents. Where they are appropriate, alternate regulatory processes are briefly discussed in the commentary to the various documents in Section 5.

Throughout this report, the definitions of various terms, agencies, documents and processes as given in the Model Act and the Model Rules and Regulations are used

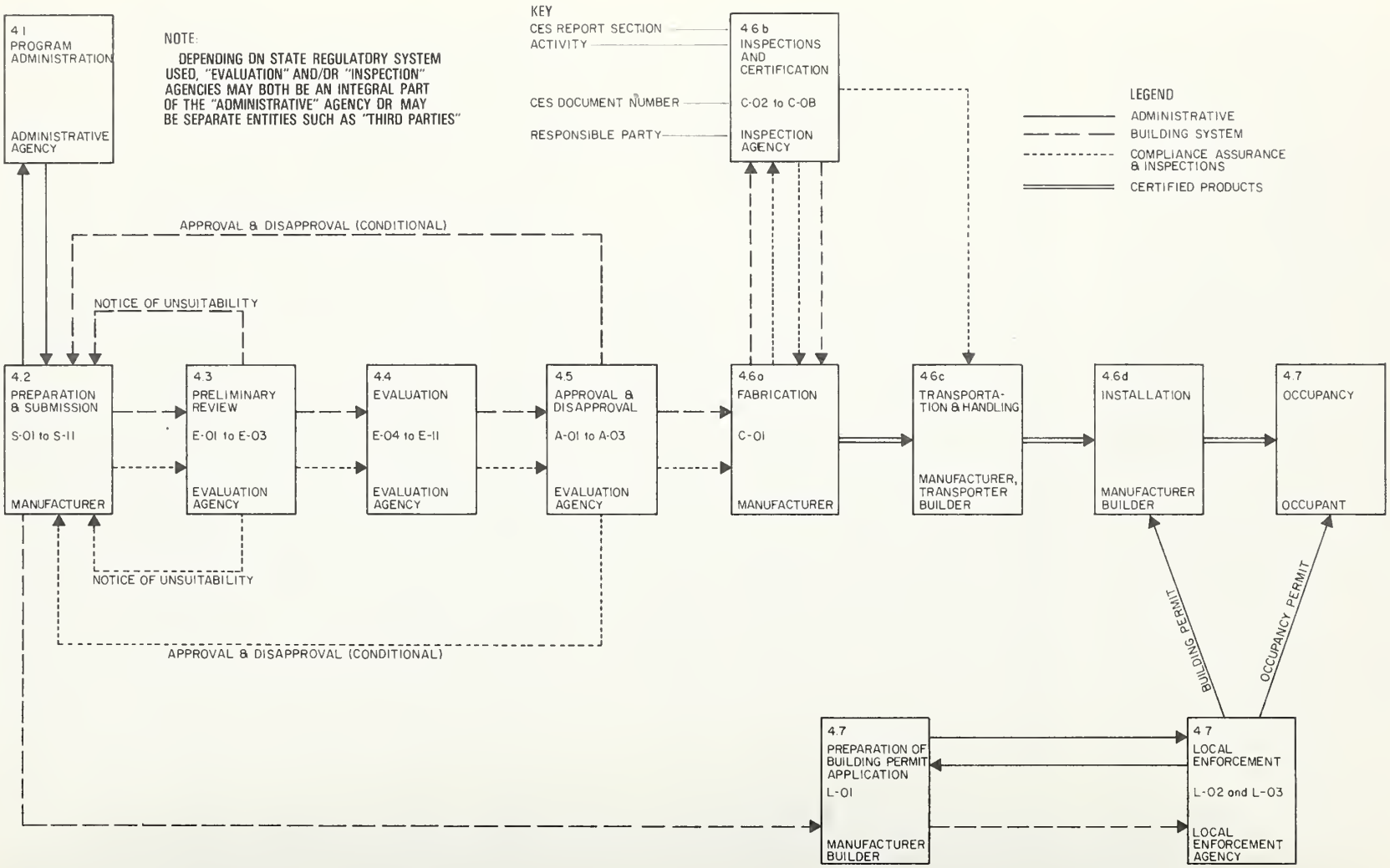

Figure 1. REGULATORY PROCESS FOR MANUFACTURED BUILDING

(see Appendixes A and B). Although defined in the Act and the Rules and Regulations, the following three terms relating to specific agencies and to the delegation of specified regulatory functions do appear to require additional comments.

Administrative Agency means the state agency which is charged with the administration of the Act and the Rules and Regulations. The Model Rules and Regulations provide the option for the Administrative Agency to delegate the function of evaluation to an approved Evaluation Agency, and the function of inspection to an approved Inspection Agency. Accordingly, when the term Administrative Agency is used in this report, this agency may or may not in fact perform all of the regulatory functions of evaluation, approval, inspection, and certification.

Also, both the Evaluation Agency and the Inspection Agency may be a part of the Administrative Agency, may be approved third party agencies, or may be agencies of another state where reciprocity is granted to such other state. It should be understood that the option to delegate pertains to the state agency only, and not to the manufacturer. Accordingly, where the process indicates, for example, that the manufacturer must submit his application for approval of a building system to the Administrative or Evaluation Agency, it is not implied that the manufacturer may submit the application to either agency according to his choice, but rather that he must submit his application to that agency which has been designated in that particular state to receive the application.

a. Initiation of Action

The activity with respect to obtaining approval to produce units under the provisions of the Act is usually initiated by an inquiry from the prospective manufacturer to the Administrative Agency. In response, the Administrative Agency provides the manufacturer with the information giving the requirements pertaining to (1) the regulatory procedures; (2) the documents delineating the construction and the data substantiating its adequacy; and (3) the inspection and control procedures applicable to the fabrication activities. The requirements are contained in the Rules and Regulations; and details, clarifications, and commentary are often given in so-called informational bulletins supplementing the Rules and Regulations. Several of the documents and procedures discussed in this report have been developed for use in the preparation of such bulletins.

4.2. Preparation and Submission

The manufacturer is responsible for the preparation of the documents depicting the proposed construction, i.e. plans and specifications, and the data substantiating its adequacy, such as calculations and test results [Part IV, Section 2(A)(1)].[3] These documents and data are defined by the regulations as the "building system" [Part I(F)]. He is also required to establish a compliance assurance program to

[3]Unless otherwise noted, references to "Parts and Sections" pertain to the parts and sections in the Rules and Regulations (Appendix B).

ensure that all activities from the fabrication to the installation of the proposed construction conform with the regulations, and prepare a compliance assurance manual documenting this program [Part V, Section 2].

When completed, the manufacturer transmits the documentation to the Evaluation Agency for review, evaluation, and approval. The submission may consist of: (1) a building system; (2) a building system and a compliance assurance program; and (3) a compliance assurance program covering a previously approved building system.

a. Building Systems

The building system submittal consists of the application form, plans, specifications, calculations, and test reports describing the proposed construction in sufficient detail to permit the determination of code compliance. CES Documents No. S-01 to S-07 apply to the submission of building systems, and detail the submission requirements where a basically complete manufactured building is being submitted. In the case of a building component, only those items should be submitted which are germane to this component and its compliance with the applicable code provisions. CES Document No. S-08 gives, in matrix form, guidance for the selection of items which should be submitted for a component. In addition to the documentation, the submission also is to include the fee deposit as specified in Part IV, Section 6 of the Rules and Regulations.

Although in this report the term "building system" is used in the singular form, it must be pointed out that a building system may include several so-called models or variations. See also Section 5.2 of this report for additional discussion on this matter.

b. Compliance Assurance Program

The compliance assurance program submittal consists of the application form and a compliance assurance manual. This manual identifies and lists all those procedures which the manufacturer and the Inspection Agency propose to implement to assure that the finished manufactured product conforms to the approved building system, the Rules and Regulations, and the applicable codes. The approval of a compliance assurance program is valid only for use with the building system on which it is based. The details of the compliance assurance program are discussed in Section 5.2 of this report and the CES Document No. S-09 applies to the preparation and submission of compliance assurance programs and manuals.

c. Modifications and Variations

Any modification to a previously approved building system or compliance assurance program and any variation of certified units require approval by the Administrative or Evaluation Agency [Part IV, Section 2(A)(7) and (B)(6), and Section 3(D)].

(1) Modifications. Minor modifications to building systems or compliance assurance programs may be submitted for approval using an application form such as shown in CES Document No. S-10 "Application for Approval of Minor Modification to an Approved Building System or Compliance Assurance Program". Such submittals should be accompanied by revised or new drawings, specification sheets, and appropriate compliance assurance manual sheets indicating clearly the revisions for which approval is sought.

If the modification is of such magnitude or extent as to materially affect the major features of the previously approved building system or compliance assurance manual, the Administrative or Evaluation Agency may request the resubmittal of the entire system or manual for approval as a new application.

(2) Variations. If a manufactured building or building component is to be altered after certification but prior to the issuance of a building permit, approval of such variation must be obtained from the Administrative or Evaluation Agency. Submittal of a request for such approval should consist of CES Document No. S-11, "Application for Approval of Variation to a Certified Manufactured Building or Component," and of appropriate plans and specifications clearly identifying the variation(s) for which approval is sought.

4.3. Preliminary Review

The Administrative Agency records the receipt of and identifies the submittal on the Processing Record (CES Document No. E-01). Each submittal is given a number (in sequence of receipt) and this number is recorded both on the Processing Record and on the Application Form. A receipt should be given the applicant confirming that the application and deposit have been received and giving the processing number. If the Application Form (CES Document No. S-01) is printed on a multicopy form, a signed or stamped copy of this form could be used as this receipt.

The Evaluation Agency reviews the application for suitability for processing [Part IV, Section 2(A)(2) and (B)(2)]. This review includes the determination that the building system meets the definition of Manufactured Building [Part I(P)] or Building Component [Part I(E)] and falls under the scope of the Act, and that the submittal meets the administrative requirements of the regulations and is complete enough to begin evaluation. CES Document No. E-02 can be used as a checklist for this preliminary review.

If the submittal is suitable for processing, the Evaluation Agency initiates the detailed evaluation activity. In either event, the disposition of the submittal following the initial review is recorded on the Processing Record (CES Document No. E-01). If the submittal is determined to be unsuitable for processing it is returned to the manufacturer with the Transmittal of Submittal Unsuitable for Processing Form (CES Document No. E-03), which states the basis for this action. If the unsuitability is due to a minor deficiency, such as the missing of a required single detail or item, the applicant should be given an opportunity to correct such deficiency before any formal action is taken.

4.4. Evaluation

Building system submittals and compliance assurance submittals found suitable for processing are reviewed by the Evaluation Agency for compliance with the requirements of the Regulations [Part III and Part V, Section 1 and 2]. The discussions and interpretations of these requirements contained in Section 5.4 of this report and the Evaluation Checklists (CES Documents No. E-04 to E-08 and E-10) have been developed to aid in these activities. Where documentation for certified or tested products are part of a building system, CES Document No. E-09 will be helpful in evaluating such documentation.

As part of the evaluation of compliance assurance programs, Part IV, Section 4(A) of the Rules and Regulations requires that the Evaluation Agency inspect the manufacturing facility in which the buildings or components are to be manufactured. The Manufacturing Facility Evaluation Report (CES Document No. E-11) is designed to serve as a reporting form for this activity.

Following the completion of the evaluation, the disposition of the submitted documents is recorded on the Processing Record (CES Document No. E-01).

4.5. Approval and Disapproval

a. Notice of Completed Evaluation

As soon as possible after completion of the evaluation, the Administrative or Evaluation Agency should notify the manufacturer of the results of the evaluation. The Notice of Completed Evaluation also should contain the amount of the fee, if any, due to the agency, or any refund due to the manufacturer in case the total fees are less than the deposit collected. If the Agency's action is to disapprove the application, the Notice of Completed Evaluation should contain the reasons for such action, and all submitted documents should be returned to the manufacturer. CES Document No. A-01 suggests the format and contents of the Notice of Completed Evaluation.

Although the Model Rules and Regulations, in Part IV, Section 2(A)(4) require the above described course of action for disapprovals, it should be noted that a complete resubmission is costly and time-consuming, both to the manufacturer and the Evaluation Agency. Accordingly, where an application is to be disapproved because of a minor, or isolated item of non-conformance, or because of missing information, it is desirable that the applicant be notified of the impending disapproval to give him an opportunity to make the necessary corrections, or to supply the needed additional information without requiring a complete resubmission.

b. Stamp of Approval

Building systems and/or compliance assurance programs which have been evaluated and are found to comply with the applicable codes and all requirements of the Rules and Regulations will be approved [Part IV, Section 2] by the Evaluation Agency. Such approval for a building system will be evidenced by placing a stamp of approval on

each sheet of the building system [Part IV, Section 2(A)(5)]* Approval for a compliance assurance program will be evidenced by placing a stamp of approval on each sheet of the compliance assurance manual [Part IV, Section 2(B)(5)]* CES Document No. A-02 gives the format of stamps that may be used for this purpose.

c. Building Systems Approval Report

In addition to sending a Notice of Completed Evaluation to the applicant and to placing the approval stamp on the approved building system, the Evaluation Agency is also required to prepare and transmit to the applicant a Building System Approval Report [Part IV, Section 2(A)(6)]. CES Document No. A-03 was developed as a model for such reports. It will be noted that the recommended content is similar to that used in the application form. Accordingly, it may be possible to use the application form filled out by the applicant and counter-signed by the approving authority as the approval document. However, such a combination document would have to incorporate all items shown on both CES Documents No. S-01 and A-03.

It should be noted that approval of a building system is not to be considered an approval to fabricate and certify manufactured buildings, and/or building components. Fabrication and certification should only start after both a building system and a concurrent compliance assurance program have been approved. In this sense, the "building system's approval" can be considered a "conditional approval."

Following the transmittal of the approved documents, the Processing Record (CES Document No. E-01) is completed and filed with the Evaluation Agency's copies of the approved documents and the Building System Approval Report.

4.6 Fabrication, Inspection, Certification, Transportation, and Handling, and Installation

A manufacturer, having secured approvals for both the building system and the compliance assurance program can now begin the fabrication of manufactured buildings or components which will qualify for certification if they are: (1) manufactured according to the approved building system, (2) fabricated under the concurrent approved compliance assurance program, and (3) manufactured in the fabricating facility inspected in connection with the compliance assurance evaluation. Neither the approved building system or compliance assurance program may be altered or modified in any way without obtaining prior approval of such changes.

a. Fabrication

Fabrication of manufactured buildings and/or components should follow the process described or implied by the approved compliance assurance program. Although it is not the intent of the Act or the Rules and Regulations to regulate the methods or processes of fabrication, the methods or processes used may influences the required inspections and other aspects of compliance assurance (C.A.). Accordingly, any deviation from the manufacturing process described or implied in the C.A. program should be reported by the manufacturer to the Inspection Agency, together with a request for

*In certain cases, a certification or approval statement on the title page of each set of documents may be adequate.

approval of a change in the C.A. program if required, or a justification why the fabrication process or method change does not require a modification of the program.

Part IV, Section 3(A) of the Rules and Regulations requires that the manufacturer provide certain information directly or by reference on a "Manufacturer's Data Plate". CES Document No. C-01 discusses the content and format of such plates for both complete manufactured buildings and components.

b. Inspection and Certification

The compliance assurance program details the necessary inspections in the plant. CES Document No. C-02 was developed as a suggested checklist for such inspections for a complete manufactured building. For components, only those inspections germane to the component are required, and the inspection checklist should be modified accordingly. Inspections should be reported on a form similar to CES Document No. C-03. If the inspection indicates deficiencies either a "Noncompliance Tag" (CES Document No. C-04), a "Prohibited Sales Notice" (CES Document No. C-05), or a "Notification of Suspended Activity" (CES Document No. C-06) will be issued by the Inspection Agency. If no deficiencies are found, or if the deficiencies have been corrected, the completed manufactured unit is certified by the attachment of a "Label" (CES Document No. C-07) signifying that the unit was manufactured according to an approved building system and under an approved compliance assurance program. The use of each individual label is recorded on the "Label Control Record" (CES Document No. C-08).

c. Transportation and Handling

Although the activities of the manufacturer (and applicant for the building system) may end at the factory gate, the regulatory process is concerned with the code compliance of the unit as installed on the site. Because faulty methods of transportation and handling between factory and site may adversely affect the code implied performance of the unit in service, Part V, Section 2(D), requires that the compliance assurance program contain instructions for the proper handling of the units, such as the identification of proper locations of lifting and supporting points for manufactured modules, panels, and components. Also, according to Part IV, Section 4, the Inspection Agency is responsible for follow-up inspections during handling, storage, and transportation between the factory and erection site. Deficiencies noted during such inspections are to be reported to the Administrative Agency on CES Document No. C-03 (Inspection Report). In addition, and as warranted, a Noncompliance Tag (CES Document No. C-04) or a Prohibited Sales Notice (CES Document No. C-05) should be attached to any units found to be deficient.

d. Installation

In Part V, Section 2(E), it is required that the compliance assurance program contain the procedures for installation, field erection, and finishing work, including utility connections, and appropriate on-site inspection criteria and test descriptions. Although in some existing state programs the Inspection Agency is required to

perform on-site inspections to verify the compliance of installed units with the approved building system and with all other state requirements, on-site inspections are generally performed only by the local enforcement agency which is responsible for the inspection and enforcement of site related and local requirements, such as zoning, foundations, and utility connections. If deficiencies related to the compliance with state requirements are found during on-site inspections (either by the local enforcement agency or by the Inspection Agency), the Administrative Agency should be informed of such violations. CES Document No. L-02 (Manufactured Building Violation Report) should be used for such notification. In addition, deficient units should be identified by attaching a Noncompliance Tag (CES Document No. C-04) or Prohibited Sales Notice (CES Document No. C-05) as appropriate. For deficient units which are not brought into compliance within a reasonable time, or which are found to be so damaged as to be irreparable, the Administrative Agency can order the removal of the label and the disposal of the unit [Part IV, Section 4(C)(1)].

4.7. Local Enforcement Activities

Prior to the installation of certified manufactured building units, the manufacturer, developer, or owner must apply for a building permit from the local authority having jurisdiction over the proposed erection site. The Rules and Regulations require that local enforcement agencies must issue such building permits prior to the unit's installation and may not withhold permits for buildings containing certified building units or components which in all other respects comply with all applicable codes [Part IV, Section 5(A)]. Although figure 1 indicates the issuance of the building permit related to the installation activity, this does not imply that the submission of a building permit application and the issuance of the building permit can not, or should not, precede the activities of fabrication and transportation.

Municipalities may use either separate building permit applications for the structural, electrical, plumbing, heating, ventilating or air conditioning, or a single form containing all elements. In either case, these forms can generally be adapted to applications for certified manufactured buildings or building components. CES Document No. L-01 is one example of a suggested local Building Permit Application form currently being used by various state and city agencies. The building permit applications are prepared by the builder (or his agent); such builder may be the manufacturer or a developer who obtains the manufactured units from the producer.

After receipt of the Building Permit Application and its evaluation, the local enforcement agency issues to the builder or owner a building permit which authorizes the builder to commence the on-site work and the installation of manufactured buildings or components. After completion of the on-site work, and the satisfactory completion of all inspections, a certificate of occupancy (CES Document No. L-03) is issued by the local enforcement agency. Local usage differs on whether a separate application for the certificate of occupancy is required or whether the satisfactory completion of the final inspection is followed automatically by the issuance of the certificate of occupancy. Building permit and certificate of occupancy are discussed in Section 5.7.

4.8. Interstate Acceptance (Reciprocity)

Most existing state programs for the regulation of manufactured buildings and components provide for acceptance of units which have been certified in another state without passing through the full submission, evaluation, and inspection process. However, few, if any, of these provisions are currently implemented.

Part VII, Section 2, "Procedures for Reciprocally Certifying Manufactured Buildings or Building Components" requires that a manufacturer from a state to which reciprocity has been extended shall submit evidence that his building system and compliance assurance program have been properly approved in his state. Both CES Documents No. S-01 (application form) and A-03 (approval report) were developed to provide this evidence for obtaining reciprocal approval.

If reciprocity has not been extended to the other state, a full application must be made. If both states have the same or similar application and submission requirements, such application in the second state is greatly facilitated for the manufacturer. If both states use the same or similar evaluation procedures and checklists, the evaluation is greatly facilitated for the Administrative Agency. Accordingly, the use of the uniform CES model documentation can be a significant element in promoting interstate acceptance of certified manufactured buildings and building components.

5. MODEL INFORMATIONAL DOCUMENTS

5.1. Use of Documents

Because of the limitations imposed on the CES documentation by the guidelines given in Section 3 of this report, the following factors must be considered when adopting and adapting the documents to a specific state regulatory program:

(1) The Rules and Regulations of the state must be reviewed, any variations with the Model Rules and Regulations noted, and all applicable documents modified as necessary. Similarily, the state's regulatory process and operating procedures need to be compared with those given in Section 4 of this report;

(2) The specific codes used in the state must be compared with the One and Two Family Dwelling Code (and the 1973 Accumulative Supplement) and all checklists modified and expanded as necessary;

(3) If the state program applies to occupancies other than one and two family dwellings, appropriate modifications and additions need to be made to checklists and forms;

(4) As mentioned in Section 3, the CES documents were developed primarily as guidelines and "benchmarks." As long as the general objectives are satisfied, the details of the documents may be varied to suit the individual state's program, its code, and its level of enforcement.

5.2. Submission

Submission as used herein means the transmittal of documents from the manufacturer to the Administrative or Evaluation Agency for the purpose of obtaining

approval for a building system or compliance assurance program. The documents involved in the submission are the plans, specifications, calculations, etc., depicting the manufactured building or building components, and the compliance assurance manual describing in detail the manufacturer's provision for assuring that the final product corresponds in all details to the building system and to all other requirements of the Act and of the Rules and Regulations. In addition to the building system as defined in the Rules and Regulations, and the compliance assurance manual, the manufacturer also should submit a building system and compliance assurance approval form (CES Document No. S-01). The purpose of the CES Documents No. S-02 through S-09 is to provide the manufacturer with the detailed requirements so as to permit him to prepare a complete submission without the need for costly and time consuming resubmittals. Also included in this section is a guide to be used in the determination of submission requirements for manufactured building components where not all the information required for manufactured buildings is applicable (CES Document No. S-08).

In general, the submission requirements given below are based on the requirements as stated in Part V of the Rules and Regulations.

a. Building Systems

As defined in the Act and the Rules and Regulations, the building system means the plans, specifications, and documentation for a system of manufactured buildings or for a type or a system of building components. The documents in this section discuss and define both the format and the content of the various items to be submitted when applying for building system approval:

CES Document No. S-01	Application for Building System and Compliance Assurance Program Approval
CES Document No. S-02	General Submission Requirements
CES Document No. S-03	Architectural Submission (including fire protection, health and safety)
CES Document No. S-04	Structural Submission
CES Document No. S-05	Mechanical Submission
CES Document No. S-06	Plumbing Submission
CES Document No. S-07	Electrical Submission
CES Document No. S-08	Submission Requirements for Manufactured Building Components

The submission requirements are based on the general description of items to be submitted as given in Part V, Section 1 of the Rules and Regulations.

It should be understood that the submission requirements for any particular system should be sufficiently complete to permit a full evaluation of its code compliance, while being concise and free of extraneous information so that the evaluation can be handled efficiently. Accordingly, and as indicated in paragraph (B) of Part V, Section 1, the submission of a particular building system may need to include items other than those listed below, particularly in the case of innovative

systems, while not all the information required by the listings should be included indiscriminately. In case of uncertainty of whether a particular item needs to be submitted, the Administrative or Evaluation Agency, whose judgment in these matters is governing, should be requested for a ruling.

In addition to serving for evaluation purposes, the documents submitted, after approval, also must serve as the principal source of information needed by the inspectors in determining the adequacy and conformance of the unit constructed. It is important that this latter purpose also be considered in the preparation of the submission, both with respect to content and format. Thus, it is necessary that the building system documentation be closely coordinated with the compliance assurance manual.

Two additional comments applying to all building system submission documents must be made at this point:

(1) Systems Approach. For manufacturers who fabricate a number of similar units, such as units with similar floor plans but with different width, or units with identical floor plans but with different roof configurations or different fenestrations, the requirements for building systems do provide for the submission of documents depicting a range of differing units under a single submission. An effort was made to recognize this "systems submission" but it is difficult to foresee all possible systems combinations that can be submitted. Accordingly, nothing stated in the CES Documents No. S-02 to S-08 is to be construed as limiting submissions based on the systems approach.

(2) Alternate Submission Documents. The CES submission document requirements are based on conventional documentation consisting of plans, specifications, etc. This approach should not prevent the use of novel types of documentation, such as printouts of computer programs and similar methods, for the submission of building systems, particularly of structural calculations and loading tables.

APPLICATION FOR BUILDING SYSTEM AND COMPLIANCE ASSURANCE PROGRAM APPROVAL

The application form, CES Document No. S-01, was developed to serve three purposes: As a transmittal of the required documents; as a request for evaluation; and as a format to transmit some information not normally included in the building systems and compliance assurance documentation. It is not the purpose of this document to serve as a legal contract between a third-party Evaluation Agency and a manufacturer. Such a legal contract, where required, would need to be developed and signed in addition to the "Application Form".

The form also includes some information regarding the system or program which will aid the Evaluation Agency in quickly determining the character of the system or program so that the review and evaluation can proceed more rapidly. The usefulness of such additional information in the application form depends on the Administrative and/or Evaluation Agency's organization. Given below and on the following pages are a list of form contents, instructions on how to fill out the form, and a suggested application form.

Suggested Content of Application Form

1. Name of manufacturer and business or corporate address.
2. Address of fabrication plant or plants.
3. If application is for approval of a building system, name and address of signing registered architect or professional engineer if required by state law.
4. If application is for approval of a compliance assurance program, name and address of inspection agency.
5. Type of application (building system, compliance assurance program, or both).
6. If application is made for a compliance assurance program, an indication of whether such program is based on a previously approved building system, and application and approval number of such system.
7. Building classification (occupancy, use, type of construction) for which approval is sought.
8. Type of system (building module, mechanical core unit, wall panel, etc.).
9. Basic materials used and construction method (wood frame, steel, concrete, masonry).
10. Design parameters (live, wind, snow, and seismic loads, design temperatures).
11. Listing or index of documents submitted with application (plans, specifications, calculations, test reports, shop drawings, samples, compliance assurance manual).
12. Indication of other states in which the submitted system or program may have been approved, including date, application number and approval number. If approval of the application is sought on the basis of reciprocity, it should be so stated and the building systems approval record should be included in the submission.

13. Space for recording fee deposit.
14. Signatures of applying manufacturer or his agent.
15. Space for approval signatures(s) and/or stamp(s) with date of approval.
16. Space for application and approval numbers.

Instructions for Completion of Application Form

Section I. This section should reflect the type of approval sought. This application should be used when seeking approval for a new building system or a C.A. program or a major modification to a previously submitted building system or a C.A. program. Modifications of a floor plan or of a construction system, including electrical, mechanical or plumbing systems constitute a major modification. A dimensional change which does not change the system or configuration and which could be incorporated in the originally submitted plans by the Administrative Agency is one example of a minor modification. Use CES Document No. S-10 when applying for a minor modification. If application is submitted for a major modification to a building system or a C.A. program, before the previously submitted system is approved, the application number of the system should be indicated. If application for a major modification is submitted for major modification to a system which is partially approved (e.g. has a building system approval, but the C.A. program is still under process of approval or vice-versa), then both the application numbers and approval numbers (if any), should be so indicated.

Section II. If application is submitted for a C.A. program approval, the name of Inspection Agency monitoring the C.A. program should be indicated. The space (Name of Reg. Architect/Prof. Engineer _____) is to be filled out in cases where the services of a Reg. Architect and/or Prof. Engineer have been utilized. Where additional space is needed for the required listing of architects and engineers, this additional information should be indicated on the reverse side of the application form. Where manufacturing operations are conducted in more than one location, indicate such locations on the reverse side of the form.

Section III. Calculations submitted should be identified, e.g. heat loss, structural, electrical, etc. Approval numbers of the same system approved by other states should be indicated and if approval reports from other states are included with the submission, they should be so identified in the space ☐ other (specify)_____.

Section V. In first line, applicant should indicate to what codes and standards the building system conforms.

STATE OF _____

[*Name and Address of Administrative Agency*]

APPLICATION FOR BUILDING SYSTEM AND COMPLIANCE ASSURANCE PROGRAM APPROVAL

NOTE: Applicants should complete all items (I-V). Mark boxes where applicable.

I. TYPE OF APPLICATION

☐ New System or Program ☐ Major Modification
☐ Building System and C.A. Program
☐ Building System (only)
☐ Compliance Assurance Program (only)
☐ Previous Application or Approval Numbers:
Building System_____ C.A. Program_____

VII. AGENCY USE ONLY

Building System Appl. No._____
C.A. Program Appl. No. _____
Date of Application _____
Fee Deposit Received _____

II. IDENTIFICATION

Name of Manufacturer_____ Tel. No. _____
Address _____
Location of Manufacturing Plant_____
Name of Inspection Agency_____
Address _____
Name of Reg. Architect/Prof. Engineer_____ Reg.No. _____
Address _____ State _____

III. DOCUMENTS SUBMITTED ☐ Plans ☐ Specs ☐ Test Data ☐ Shop Dwgs. ☐ C.A.Manual ☐ Sample
☐ Calculations (Type)_____ ☐ Other (Specify)_____
☐ Other State or Agency Approvals/Listings_____

IV. DESCRIPTION OF MANUFACTURED BUILDING OR COMPONENT

A. Occupancy: ☐ One and Two Family Detached ☐ Other (Specify)_____
B. Type of Construction (Classification)_____
C. Type of Systems: ☐ Unitized Modular ☐ Core Unit ☐ Component
☐ Architectural ☐ Structural ☐ Mechanical ☐ Plumbing ☐ Electrical
☐ Other (Specify)_____
D. Principal Construction Material: ☐ Wood ☐ Concrete ☐ Steel ☐ Masonry
☐ Other (Specify)_____
E. Energy Source: Heating_____ Cooling_____
F. Design Parameters: Live Load___ Wind Load___ Snow Load___ Seismic Load_____
G. Design Temperatures: Summer_____ Winter_____

V. SIGNATURES

This is to certify that the building system conforms with_____
Signature of Reg. Architect/Prof. Engineer (if reqd)_____ Date _____
Signature of Applicant/Agent_____ Date _____
Name and Title of Applicant/Agent_____ Tel. No. _____
Address _____

VI. AGENCY USE ONLY ☐ Bldg. System Approved ☐ C.A. Program Approved
Signature of Agency Official_____ Date _____
Name and Title _____

GENERAL SUBMISSION REQUIREMENTS

This CES Document discusses general items which apply to all submission requirements (architectural, structural, electrical, mechanical, and plumbing), based on Part V, Section 1(A) of the Rules and Regulations.

Specifications

A separate set of specifications may be required in applications for approval of complex or innovative building systems. For simple, conventional one and two family dwellings, it is usual to show all pertinent information on the drawings or on tables which have the same format as the drawings. Some Evaluation Agencies do appear to favor the use of extensive specifications, while others prefer that all information be given on the drawings. The CES submission documents are based on the premise that specifications are not a necessary submission requirement.

Drawings

All drawings should be submitted in a single format and should be bound in sets. The scale of the drawings should be marked on each drawing and should also be shown graphically. It is preferable that each sheet contain only drawings at a single scale. If this is impractical, the scale (both numerical and graphic) must be given for each part. The scale of the drawings and the size and style of the lettering should be such that they can be easily read. As a rule, plans and sections should be drawn to a scale not smaller than 1/8 inch to a foot, and details should be shown at a scale consistent with the complexity of the detail.

Specifically, Part V, Section 1(A) requires the following items to be placed on the submission drawings (numbers given below correspond to those given in the Rules and Regulations):

(3) Identification of manufacturer and plant.

(5) Signature of registered architect or professional engineer if required by state law.

(6) Clear distinction between that work which is to be performed in a manufacturing plant, and that work which is to be performed on-site.

(7) A 3-inch by 4-inch blank space for approval stamp.

(12) Date and sheet number, and number of sheets in set.

In addition, the building system should be clearly identified on each sheet, and a space for marking the nature and date of any revisions should be provided.

References To Standards

Where information necessary for the proper construction or installation of an element is contained in a standard and not repeated in the documents, such standard should be clearly noted and identified in all applicable places (drawings, specifications, calculations, etc.). Such identification should make reference to the specific portion of the applicable standard, and if the standard is not contained in standard reference publications, a copy of the standard should be included in the submission documents. The same recommendation applies to test methods and test reports which are discussed in greater detail in CES Document No. E-09.

Alternate Designs

According to the definition of "building system" as given in Part I(F), alternate designs of a manufactured building or component may be submitted as a single building system. Such alternates should be of the same construction method and for the same intended uses. Examples of alternates would be a manufactured building for which approval is sought both with a gable end roof and with a hip roof, or a model which has an alternate interior room arrangement, or is to be built in differing sizes.

Where such alternates are submitted as part of a building system, they should be clearly identified on all documents and all information regarding the alternate construction must be given to permit their evaluation for code compliance in the same manner as required for the basic system. In particular it is not sufficient to indicate on the documents only the alternate construction itself, but also the influence such alternate has on the basic system. For example, where an alternate addition of a room blocks a required exit way, it is mandatory that the documents show an alternate exit.

It is also permissible to show a range of alternates in the building systems submittal. For example, a range of widths may be given for a patio door which may vary between 2'-8" and 6'-0". In these cases header and jamb post schedules, together with all necessary calculations, may serve to show how the structural requirements for the various widths are met.

When submitting alternates it is particularly important that such alternates also be recognized in, and coordinated with, the compliance assurance manual. Specifically, the inspection checklists must include the necessary notations to alert the inspector to the fact that alternates are to be inspected.

Handling, Transportation, and Site Related Items

In order to properly evaluate a building system and to define the respective jurisdictions of the state regulatory function and the local enforcement function, it is necessary to clearly indicate on all documents: (1) those code related items which are constructed in-plant (manufactured); (2) those items which are constructed on-site; (3) the method of joining and connecting the manufactured unit to the site built parts; and (4) to give such information on transportation, handling, and erection which may be required to assure that concealed parts of manufactured and certified units can not be damaged before completion of erection. The items associated with handling, transportation, installation, and on-site work that should be included in the building system submission are:

(1) Method of protection against the elements during transportation and storage;

(2) Lifting points and any temporary bracing required for the unit or for individual parts and equipment;

(3) Tie-downs and supports needed during transportation, and total weight of each certified unit;

(4) Details of field connections between adjacent units, including flashing of field joints, etc.;

(5) Details of connection of the unit to its site built foundation, including a diagram showing location of such connections; sizes of required site-installed anchors and bolts and the tolerance requirements for their location; method of adjustment for levelling; utility connections, etc.; and

(6) Indication of any accesses which need to be incorporated in foundation walls so that the units can be properly installed and connected to utility services.

ARCHITECTURAL SUBMISSION

Part V, Section 1(B)(1) to (3) gives the submission requirements in regard to general construction details, building classification, space and fire safety. This document discusses each of these requirements and provides additional details as an aid to the manufacturer in the preparation of the building system submission.

The documentation depicting the architectural, fire safety, and health and safety items should provide the information necessary for the evaluator to determine that these items conform to the requirements of the applicable codes. This documentation in general should consist of at least all floor plans, sections, and elevations. In addition, these documents should also be suitable to serve the inspector in determining that the unit under construction or constructed is in fact built according to the documents.

1. General

(a) Installation Details. This item is discussed in CES Document No. S-02.

(b) Exterior Elevations. All exterior elevations of the unit should be shown. Such elevations should show the location of all openings, such as door, windows, ventilators, etc., and should show the roof line or lines, roof draining system, eaves, chimneys, steps, balconies, porches, lighting fixtures or their location, integral plant boxes and similar ornamental attachments, and the location of the certification label. In addition, floor and ceiling lines should be marked, and materials properly identified. Schedules, tables, or part elevations may be used to show alternate designs or ranges of alternate designs.

(c) Cross Sections. All necessary cross sections should be given to show floor and ceiling levels, platforms, stairs, wall openings, chimneys, ventilators, roof slopes and eaves, over-hangs and cantilevers, fixed awnings, porches, and the like. All heights should be properly dimensioned, materials given by grade, type, etc., and, if a site-built foundation is shown on the section, the dividing line between it and the factory-built unit must be clearly defined. The cross sections also should show the levels for the site-built foundations or supports if the foundations are not shown. Where a manufactured building is assembled on-site from manufactured components, the single components should be clearly identified and defined on the sections.

(d) Flashing Details. The method, size, material, and location of all flashings must be shown and identified. Of particular interest are flashings or provisions for them built into the unit, but used to cover joints on the building site, such as

joints between adjacent modular units, between manufactured components, and between manufactured parts and site-built elements. In these cases, the details must clearly indicate by notes or otherwise what work is to be done in the plant, and what work is to be done on-site, including an indication of whether the necessary material for on-site work is provided by the manufacturer or by the installer or builder.

(e) Attic Access and Ventilation. Location, size, and type of access to the attic should be shown, including details of trap doors, ladders, etc., needed for gaining access to the attic space, as well as any flooring or "cat-walks" within the attic space. Also included should be the necessary information regarding mechanical devices used in the attic access, such as counterweights and balances, and the clearances provided around and above the access area and the stairs or ladder leading to it.

Attic ventilators should be shown and identified as to type and, in case of mechanical or electrical devices, should be included in the appropriate wiring diagrams. The air flow direction should be indicated and the capacity given.

(f) and (g) Finish Materials. All exterior and interior materials and their finishes should be shown. Such information should include not only the basic material, but also the grade and any other information to positively identify such materials, including references to appropriate national standards, if available, as well as pattern, type of application ("vertical siding" or "shingles"), and finish (painted, stained, etc.). If louvers or perforated panels are a part of the exterior walls or the soffit, such parts should be shown and their type, material, and finish identified.

(h) Doors and Windows. Exterior doors, windows, and other openings should be shown on the elevations keyed to appropriate schedules giving dimensions and other pertinent data, and should be dimensioned on the plans and in the sections. Separate schedules are often used for windows and doors with key letters or numbers on plans, elevations, and sections to locate the particular items.

For application in high-wind areas, the wind resistance of the windows should be given and references made to test results, certification, or standards of the window and sliding door type and size used. In addition, for sliding or patio doors, the glass should be identified to thickness and type (plate, safety, tempered, etc.) and reference be made to test results, certification, or standards of such glass.

(i) Foundations. Recommended or suggested foundation plans should be shown, giving the location and level of all connectors and anchors by which the manufactured building or component is attached, and showing the bearing loads acting on the foundation. For additional information, see CES Document No. S-04 on structural submission requirements.

In addition, the recommended foundation plans also should show access, vents, and other items that are required in the foundation to properly install, connect, and maintain the manufactured unit. See CES Document No. S-02 for an additional discussion on this item.

2. Building Classification

(a) Occupancy - Use. Occupancy and use of the manufactured building, or of the building in which a manufactured component is to be installed, is to be given on the application form (see CES Document No. S-01). However, this information should be repeated on the drawings.

In addition to the occupancy and use classification of the unit, each room within a manufactured building should be identified (such as living room, kitchen, etc.).

(b) Area, Height, Number of Stories. The plans should contain the total building area. Heights and number of stories should be shown on the cross sections discussed above.

(c) Type of Construction. The basic type of construction classification for the manufactured building is to be given in the application form (CES Document No. S-01). If the actual construction of various parts or elements of the building are of different materials and construction methods, each such method should be properly identified so as to permit the evaluation and classification of the building.

(d) Fire Resistance Ratings. Where required the fire resistance ratings should be given for all rated stairway enclosures, doors, walls, floor, and roof assemblies, partitions, columns, and shaft enclosures. Where such ratings are tied to specific or proprietary materials and/or systems, such materials or systems must be identified on the drawings and other documents. The ratings should make reference to tests performed, certification or labeling, etc.

3. Space and Fire Safety

(a) Fire Resistance Rated Assemblies. All fire resistance rated assemblies should be adequately detailed. Openings in walls, floors, ceilings, partitions and other building elements must be dimensioned and provision for such items as fire dampers must be identified, including any rating of such equipment. The exact location and extent of any required fire rated wall or partition should be clearly shown. For example, it must be indicated whether a fire separation wall extends above a ceiling to the underside of the floor above, whether it stops at the finished ceiling height, or whether it bypasses the floor or roof above.

(b) Exit, Stair, and Passage Enclosures. The width of all aisles, exits, corridors, passageways, and stair enclosures should be shown. The method of dimensioning should clearly show whether such dimension refers to rough or clear dimensions, and whether the dimension is taken between walls or between handrails. On stair platforms, the dimension between the stair railing or newel post and the back wall of the landing or platform should also be shown.

(c) Toxicity and Flamespread Classification. According to the Model Rules and Regulations, the toxicity and flamespread classifications should be shown for all finish materials. For all such ratings, reference should be made to the appropriate test reports, certifications or labelings. The exact extent of all flammable finish surfaces should be noted on the drawings, and any interruptions of such surfaces should be shown.

In regard to fire safety, reference should also be made to CES Documents No. S-05 and S-07 which discuss mechanical and electrical submission requirements.

STRUCTURAL SUBMISSION

Part V, Section 1(B)(4), (a) through (l), of the Rules and Regulations gives the submission requirements for structural items in general as well as in specific terms. This document discusses each of these requirements in detail as an aid to the manufacturer in the preparation of the structural submission documentation. The requirements as given below are based on a typical, conventional submission. It is recognized that with the increased use of computers and computer based design and drafting methods, alternate submissions based on such new methods should also be acceptable to the evaluator.

General Requirements

The documentation depicting the structural system for manufactured buildings should provide the information necessary for the evaluator to determine that the structural design of the proposed units complies with the regulations. For small structures, all pertinent information is often included on the structural drawings rather than in separate specifications.

The structural drawings or separate specifications should contain a section of general notes. These notes should include a listing of all of the standards followed in designing the structure and those applicable to its fabrication, the design loadings and the grade or quality of material to be utilized in constructing the structural system.

It is permissible to use a format for structural calculations and drawings that permits flexibility in construction, such as showing variations in the spans of members, the locations of walls and openings, etc., provided that the drawings specifically define the element to be varied and clearly identify the limits of its variation. As a general rule, the drawings should depict the system at its maximum, and identify elements that can be omitted or reduced. Examples of this include the depiction of a wall with the maximum number and size of openings that would occur in the units produced, and noting those that may be omitted, reduced or moved within the maximum and minimum dimensions shown; the depiction of a floor plan with maximum and minimum dimensions for the width and length of the structure and the location and length of bearing and shear walls; and the scheduling of the type and size of joists or rafters to be used for various spans. In the drawings, the information must be presented in a manner that can be readily interpreted by the evaluators and inspectors. The calculations must substantiate the adequacy of units incorporating the combinations of variations that produce the least capacity to support the design loads.

The structural drawings should clearly and specifically identify the elements that are to be constructed in the plant and those that are constructed or installed at the installation site. It is preferable that all work to be performed at the site

be depicted on a sheet of the drawings separate from those showing the construction to be performed in the factory.

(a) Engineer's Calculations of Structural Members, Where Appropriate. Calculations should be provided for all members and connections supporting other than nominal loads. The only exceptions to this requirement are structural members utilized in accordance with specifications contained in the regulations or otherwise approved by the Administrative Agency (or Evaluation Agency). Examples of these exceptions are the use of wood rafters or joists as specified by the model building codes, and the use of open web steel joists selected from load and span tables prepared by an industry association and approved by the Administrative Agency.

The calculations should be organized in a comprehensive manner and be clearly identified with the element of the structural system they pertain to, so the evaluator may easily review the design processes. The calculations should list the design loads, including the controlling combinations of loads, the standards which were followed in preparing the design, and the material, grade and size of members and connectors selected to satisfy the design requirements. Unless otherwise approved by the Administrative Agency, the standards for the design and for the materials selected should be those contained in or referenced by Part III, Section 1 of the Rules and Regulations. The use of materials or construction methods for which approved standards do not exist may be permitted when their adequacy has been substantiated to the satisfaction of the Administrative Agency.

The calculations should also substantiate the capability of the structure to withstand lifting stresses, and unless specific exemption is granted, design loads due to wind or seismic forces. Both the calculations and the drawings should identify the points of lifting and support during transportation. The calculations should provide a complete analysis of how these loads are resisted by the structure, including points of concentrated loads and the anchorage of lifting inserts if any. If lifting slings are used, the analysis should include the effects of the vertical concentrations at the floor and the horizontal reactions of the slings at the floor and eave lines. Appropriate impact factors should be applied to lifting loads. The analysis substantiating the adequacy of the structure to withstand design loads due to wind or earthquake should include calculations for both individual elements and the structure as a whole. A complete analysis should also be made of the connections.

Where the analysis of the structure is performed through the use of a computer, a copy of the applicable programmer's manual should be submitted with the computer print-out unless specific exemption is granted. In this case, sketches of the structural framing with the members numbered as entered in the program should be included.

(b) Design Soil Bearing Value. In many instances, the foundation may not be included in the building system submission. In these cases, the manufacturer or builder should obtain approval of the foundation from the local jurisdiction as provided by Part IV, Section 5 of the Rules and Regulations.

However, if a manufacturer submits one or more foundation designs, each such design should identify the required minimum soil bearing capacity. When this is done, the drawings should clearly note that the foundation for a specific site should be approved by the regulatory agency with the appropriate jurisdiction, prior to its installation. The substantiation of the adequacy of foundation systems should include the effects of expansive soils when encountered, considerations of depth of footings to avoid frost-heaving, as well as proper bearing capacity.

Regardless of whether or not the foundation is part of the structural submittal, the structural drawings should show the location and magnitude of all loads to be supported by the foundations. Particular attention should be given to concentrated loads such as those resulting from the reaction of beams supporting relatively large loads that may be supported on isolated footing pads. With the exception of small structures (generally one story), the loadings should be broken down into dead, live and lateral loads to provide the information necessary to consider the results of soil settlements.

(c) Structural and Framing Details of all Floors, Roof and Walls. The structural drawings should include a framing plan for each floor and the roof. Repetitive framing plans for the floors of structures with more than one story may be combined on one drawing, provided that variations are minor and are clearly identified.

Framing plans should identify the material, size, location and orientation of all structural members, bracing and bridging, and the structural materials acting as the surfaces of the floors and roof. The connections of the walls and floor to the foundations should be detailed. Structural framing around all openings, including those for mechanical ducts, should be shown, as well as that supporting mechanical equipment.

Where the use of alternate or optional framing or surfacing materials is proposed, these options must be clearly identified on the drawings.

(d) Details and Stress Diagrams of Roof Trusses. Trusses should be thoroughly detailed on the structural drawings, including the dimensions for length and rise of the truss; and the size, material and orientation of each member. The connections at each joint should be clearly shown and the connecting device or method specifically

identified. Connectors should be located by dimensions from the sides and ends of the members connected. Structural adhesives used in connections should be specifically identified and the standard applicable to their use referenced on the structural drawings.

The analysis of trusses should take full account of their method of support. For example, it is not acceptable to submit an analysis of a truss supported at its ends, when in the actual structure it also bears on interior walls. Line stress diagrams are acceptable. Where the loads occurring between panel points induce bending significantly affecting the member stresses, such effects should be included.

(e) Detail of Reinforcing Steel. The structural drawings for concrete elements should clearly show the size, number, spacing and location of the steel reinforcing bars. In addition, the drawings should conspicuously note the grade of reinforcing steel to be used and the maximum spacing of bar supports. The structural detailing should include the clearance of the reinforcing from the concrete surfaces, and the lengths, laps and any bending for each bar. The specific requirements for radii of bends should be noted.

The tabulation of reinforcing in schedules is acceptable, providing the format used provides for ready interpretation of the information by inspection personnel not necessarily skilled at inspecting concrete construction.

All items to be embedded in concrete structural elements should also be clearly detailed, including minimum concrete coverage and embedment of anchorage and, in cases of possible obstructions, relationships to the steel reinforcing. The structural drawings should show mechanical and electrical elements to be cast in the concrete, including conduits.

(f) Complete Loading Schedule. The structural drawings should contain a listing of all of the maximum loadings the structure has been designed to withstand. This listing will include the floor and roof live loads, wind, seismic, and the dynamic factors applicable to the lifting of the unit.

(g) Column Loads and Column Schedule. With the general exception of one and two-story buildings, the drawings for all structures should contain a tabulation, in schedule form, of the material, size, orientation, length and location of columns or studs used in the structure. Also included on this schedule or readily keyed to it should be a tabulation of the vertical design loads. The live loads and dead loads should be indicated separately.

(h) Lintel Schedule. The structural drawings should contain a tabulation of the material, size and orientation of the members supporting the loads over the openings in all walls and partitions of the structure. Where members of different sizes are

used over openings of the same width because of a variance in the loads supported, the limitations applicable to their use should be clearly identified. For example, it is not sufficient to differentiate between headers used in bearing walls and those used in non-bearing partitions, unless the drawings specifically identify those walls which are bearing walls.

(i) Size, Spacing and Details of All Structural Elements. All of the information necessary to construct and inspect every element that serves to support the loads the structure has been designed to withstand must be included on the structural drawings. Major members should be shown on framing plans and wall sections. Smaller elements, such as anchorages or connections should be shown on appropriate detail drawings keyed to the framing plans and sections. References to locations or spacings of items with critical tolerances should be specific, such as in the case of anchor bolts for columns or tiedowns for shear walls.

All penetrations of structural members by electrical, plumbing and mechanical components must be fully detailed or described, including the size and location of holes. Such dimensions may be expressed as maxima and minima.

(j) Grade or Quality of All Structural Elements. Where the adequacy of a structural element is dependent on its being of a particular grade or quality, such information should be included in the building system. As a general guide, all the data necessary to duplicate the design of the structure if the original computations were not available, should be included. Examples of this data are the required grades of lumber, plywood, bolts, structural steel, reinforcing steel, and the design strengths should be based on a code or standard referenced by Part III, Section 1 of the Rules and Regulations.

Where the structural system includes an element or material for which a standard has not been previously approved, the information on the drawings should include the properties necessary to determine its adequacy for the use proposed, i.e. ultimate bending and shear strength, yield strength if applicable, factors of safety, modulus of elasticity, shear modulus, etc.

(k) Elevation of Structural Elements, Walls or Sections Thereof Providing Resistance to Vertical Loads or Lateral Forces. The drawings should depict the structural system in such manner that it will be constructed in accordance with the approved design. In most instances it is not possible to accomplish this by relying on the architectural drawings and the structural roof and floor framing plans alone. As a minimum requirement for showing wall construction, a section through each exterior wall and each bearing wall should be shown on the drawings. It may be necessary to show more than one section through walls supported at the level of ceilings that vary in height. Where the construction is particularly complex, elevations of

the walls should be shown. This would include conditions where substantial tiedowns, or metal straps providing continuity around openings in wood walls are used to resist lateral loads; and the reinforcing around openings in concrete walls.

(1) Complete Details of All Structural Connections. With the exception of simple connections, such as the typical end nailing of studs to top and bottom plates which can be covered by notes, all connections should be detailed. The orientation and extent of each member at a joint should be shown clearly. The detail should show which members are supported by connecting devices and which are supported by bearing on other members. The connecting devices should be identified, and dimensions shown locating them with respect to the ends and sides of the members connected, and the spacing to other connectors in the joints. This requirement includes nailed connections where splitting of the lumber may occur.

MECHANICAL SUBMISSION

Submission requirements for mechanical items contained in manufactured buildings or building components are given in Part V, Section (B)(5), (a) through (h) of the Rules and Regulations. This document discusses these requirements as an aid to the manufacturer in the preparation of appropriate submission. Subsections (i) and (j), relating to elevator systems are not discussed since these requirements do not normally apply to one and two family dwellings.

(a) Location - Equipment[1] and Appliances.[2] Drawings should show and dimension location, size, and clearances for all equipment and appliances, e.g., fans, warm air furnaces, boilers, absorption units, refrigerant compressors and condensers.

(b) Heat loss calculations, where appropriate. Many trade and professional associations and individual equipment manufacturers have developed heat loss and heat gain calculation forms. The manufacturer should submit his calculations in one of these formats. Examples of such formats have been published by the National Environmental Systems Contractors Association and the National Warm Air Heating and Air Conditioning Association.

(c) Schedules of equipment and appliances. Schedules of equipment and appliances should be shown on the drawings to check whether the equipment used is listed by an approved testing agency and adequately sized to perform in accordance with the code and standard. Therefore schedules should show whether equipment and appliances are listed or labeled by approved agencies and also indicate manufacturer's name, make, model number, BTU/hr, and input rating. Other drawing details to aid proper evaluation are: details of motors, fans, controls, filters, safety devices, connectors, valves, automatic shut-off devices, and pressure relief devices.

Since the type of equipment used in a machinery room determines the fire resistance requirements of the enclosure, it is important that the machinery room drawings be adequately detailed with the equipment properly located and identified.

(d) Duct and register details. Drawings should show location of all ducts, air inlets and outlets, and air dampers and registers. Special attention should be given to ducts located in attics and crawl spaces in order to satisfy fire protection requirements where applicable. Details of material, support, length, size, pitch and insulation of ducts should be provided. Where the systems approach is used when

[1] In this context, "equipment" is a general term including materials, fittings, devices, appliances, and apparatus used as part of or in connection with the installations regulated by the mechanical code.

[2] In this context, "appliance" is a device which utilizes fuel or other forms of energy to produce light, heat, power, refrigeration or air conditioning.

submitting plans for approval (Vol. I, p. 16), the above details, including openings and ducts for combustion air, for each system submitted for approval should be indicated. Where the ducts, air inlets and outlets penetrate fire barriers, drawings should show necessary details.

(e) Clearances from combustible material or surfaces. Drawings should show clearances from combustible material or surfaces for heat producing appliances (furnaces, boilers, etc.), and all ducts, flues, and chimneys. Isometric views of heat producing appliances showing all clearances (side, back, front, top) are helpful to the plan evaluator and in-plant or field inspector.

(f) Combustion air details. Methods of providing required combustion air should be described. Sufficient make-up air should be provided to take care of combustion devices and exhaust fans in the buildings. Drawings should show location and area of all ventilation and combustion air openings and ducts. Flow directions should be indicated.

(g) Flues, vents and chimneys - details. Details of material, size, type and locations should be provided for flues, vents, and chimneys. Such details should show clearances from air intakes and other vents and flues.

(h) Fire safety requirements. Location and construction details of all fire dampers should be clearly indicated on the drawings. A schedule showing fire damper locations in various rooms, corridors, etc., on each floor facilitates plan review. Also complete drawings of fire sprinkler systems including risers and support systems, standpipe system or fire alarm system should be submitted, if required.

In addition to the submission requirements (a) through (h), the following information should also be provided:

(1) Plumbing calculations. Provide calculations for determining gas pipe sizing, when tables for sizing (one and two family dwelling code) are not utilized.

(2) Methods of testing. Specify methods of testing gas piping system before and after appliances are set. Submit duct test report and method of testing.

PLUMBING SUBMISSION

Submission requirements for plumbing items contained in manufactured buildings or building components are given in Part V, Section (B)(6), (a) through (f) of the Rules and Regulations. This document discusses these requirements as an aid to the manufacturer in the preparation of an appropriate submission.

(a) Layout requirements. A plan or schematic drawing of the plumbing layout, including but not limited to, size of piping, fitting, traps and vents, cleanouts, and valves, gas, water, and drainage system, should be provided.

Drawings should include a riser diagram for each plumbing stack. Such diagrams should show pipe, vent, and trap sizes, cleanout fixtures, interceptors and floor drains. Connection and installation details between pipes, fixtures, and appliances should be provided. Drawings should also show proper slope of waste and vent lines and how such lines penetrate walls and floors without destroying structural and fire integrity of such members.

(b) Materials, equipment, and appliances. All plumbing materials should be shown either on drawings, on schedules or in the specifications. All fixtures should be located on appropriate drawings. Fixture unit capacity of system(s) and the make, model and rating/capacity of equipment and appliances should also be indicated. In addition, indicate whether equipment and appliances are listed or labeled. In general, listing, labeling, and location of equipment and appliances is covered under mechanical and electrical submissions. However, rating and capacity of some appliances and equipment is covered by the plumbing code, e.g., sizing of gas piping for gas burning appliances.

(c) Safety controls. Details, make, and model of safety controls, such as for water heaters (except when such controls are a part of the equipment approval), their location, and any listings or labelings should be shown. Most mechanical codes include requirements for hot water heaters. However, in some instances these requirements are included in the plumbing code rather than the mechanical code.

(d) Pipe supports. Drawings should provide details of pipe and fixture supports (i.e., type and spacing). Where applicable pipe protection such as wrapping or sealing should be indicated.

(e) Details of vents above roofs. Details of location of vents above roofs and required clearances, including but not limited to clearances from air intakes, other vents and flues, should be provided.

(f) Methods of testing. Information on test methods and results, if required, should be furnished to the Evaluation Agency. These tests may include the following: (1) Water system test; (2) Drainage and vent-system test, (a) water test, and (b) air test; (3) Fixture test; (4) Shower stall test.

ELECTRICAL SUBMISSION

Submission requirements for electrical items contained in manufactured buildings or building components are given in Part V, Section (B)(7), (a) through (i) of the Rules and Regulations. This document discusses these requirements as an aid to the manufacturer in the preparation of an appropriate submission.

(a) Service equipment details. A plan of service equipment, including service entrance, cable sizing and protection, conductors, service raceway and clearances above structures should be provided. Also details of wall penetration and service entrance cable protection should be shown.

(b) Grounding. Methods and details for grounding service equipment, raceways or cables, outlets and receptacles, and appliances should be shown.

(c) Single line diagram - Electrical Installation. Single line diagrams should be shown for the entire electrical distribution system, telephone system, T.V. antenna system and fire alarm system. Details of electrical distribution switchboard and individual panels should be provided. Each circuit should be identified.

(d) Load calculations. Calculations for branch circuit and service loads, including methods and assumptions used should be submitted. Basis for calculating branch circuit and feeder loads are given in NEC Article 220 and typical example calculations are given in NEC, Chapter 9. Page 3 of this document gives a suggested form for calculating the service load.

(e) Feeder and branch circuit details. Drawings should identify and indicate sizes and materials for each feeder and branch circuit. Details of cable protection where nails or screws are likely to penetrate the cable should be indicated. [Details of penetration of structural members--see CES Document S-04(i)].

(f) Details for main disconnect and protective devices. Sizes, ratings and locations of protective devices such as switches, ground fault circuit interrupters, and overcurrent protective devices should be indicated on drawings.

(g) Interconnection details. The method and location of interconnection between prefabricated components or buildings should be shown. All materials and devices should be located, identified, and listings or labelings given.

(h) Outlets and junction boxes. Installation details and location of all outlet, switch and junction boxes and fittings should be provided on drawings.

(i) Installation of fixtures. Drawings should show methods of mounting and wiring of all fixtures.

In addition to the submission requirements (a) through (i) identified in the Rules and Regulations, the following information should also be provided:

Location of Equipment and Appliances.[3] The location of all equipment and of all fixed[4] and stationary[5] appliances should be shown and located on the drawings.

Listings. Any listing and labeling of wiring, fixtures, equipment and appliances should be provided, giving name of agency and code or standard used as basis for listing.

Name plate rating of all appliances and equipment. Name plate rating of all electrical appliances to be used should be provided giving the identifying name and the rating in volts and amperes, or in volts and watts. When the appliance is to be used on a specific frequency it shall be so marked. Where motor overload protection external to the appliance is required, the appliance shall be so marked.

Methods of testing. Information on test methods and results if required, should be furnished to the Evaluation Agency. These tests may include the following: (a) dieletric test and (b) continuity test.

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[3]Electrical codes define "appliance" as utilization equipment, generally other than industrial, normally built in standard sizes or types, which is installed or connected as a unit to perform one or more functions such as clothes washing, air conditioning, food mixing, deep frying, etc.

[4]"Fixed appliance" is defined in the electrical codes as an appliance which is fastened or otherwise secured at a specific location.

[5]"Stationary appliance" is defined in the electrical codes as an appliance which is not easily moved from one place to another in normal use.

CALCULATION SHEET FOR SERVICE LOADS

ASSEMBLY RATING: _____

Mfr. _____ Model _____ Size _____

General Light Load (_____ 15 amp circuits):

L x W = _____ ft.^{2} x 3 watts/ft.^{2} = _____ watts

Small appliance load (_____ 20 amp circuits):

_____ Circuits x 1500 Watts = _____ watts

(1) Total = _____ watts

First 3000 @ 100% . . . . . = _____ watts

3001-120,000 Watts @ 35% . . . . . = _____ watts

Remainder _____ Watts @ 25% . . . . . = _____ watts

(2) Total = _____ watts

Total Watts (2) _____ ÷ 230 Volts . . . . . = _____ Amps/

		DISTRIBUTION PANEL	
		LEG A	LEG B
General Lighting & small appliances	_____ Amps	_____	_____
Nameplate amperes for motor & heater loads			
Air Conditioner Motor	_____ Amps	_____	_____
Furnace Blower Motor	_____ Amps	_____	_____
Exhaust Fan	_____ Amps	_____	_____
_____	_____ Amps	_____	_____
_____	_____ Amps	_____	_____
Add 25% of amperes of largest mtr.	_____ Amps	_____	_____
Total Nameplate Amperes*			
Disposal	_____ Amps	_____	_____
Dishwasher	_____ Amps	_____	_____
Water Heater	_____ Amps	_____	_____
Clothes Dryer	_____ Amps	_____	_____
Wall mounted oven	_____ Amps	_____	_____
Cooking Unit	_____ Amps	_____	_____
_____	_____ Amps	_____	_____
*Where no. of these appliances, exceeds three, use 75% of total	_____ Amps	_____	_____
Furnace	_____ Amps	_____	_____
_____	_____ Amps	_____	_____
Free Standing Range	_____ Amps	_____	_____
	TOTAL		

Panel Rating . . . . . _____ Amps

Main Disconnect Rating . . . . . _____ Amps 2-pole

b. Manufactured Building Components

CES Documents No. S-03 through S-07 give the detailed submission requirements for manufactured buildings in regard to architectural (fire, health and safety), structural, mechanical, plumbing, and electrical disciplines. In general, these requirements also apply to manufactured building components. However, it is recognized that in the case of components some of the listed requirements are not relevant and can not be submitted. It is the purpose of CES Document No. S-08 to provide a guide, or quick reference, to the manufacturer as to what items he needs to submit.

The guide is given in the form of a matrix and shows on one hand various building parts and equipment that may be a part of the component, and on the other hand the information that should be submitted. Those intercepts that are relevant are marked with either a solid dot or a circle. Those marked with a solid dot indicate requirements which apply in all cases and for all building types or construction methods; those marked with a circle indicate requirements which may apply depending on building type, code used, occupancy, type of construction, and material.

As an illustration for the use of the matrix, the following list of requirements would apply to a manufactured component which consists of a load-bearing exterior wall panel containing electrical conduit, cables, and an outlet box.

For the panel itself, the following items should be submitted:

(1) Dimension
(2) Location(s) (in building)
(3) Plans
(4) Cross sections
(5) Elevations
(6) Details
(7) Structural calculations and diagrams
(8) Bearing values
(9) Loading schedules
(10) Installation and connection instructions

Depending on the materials used, type of occupancy and construction method, the following additional items may need to be submitted:

(11) Weight
(12) Heat loss calculations
(13) Fire separation ratings
(14) Fire resistance ratings
(15) Fire stopping
(16) Test reports, listing or labeling
(17) Structural support provision

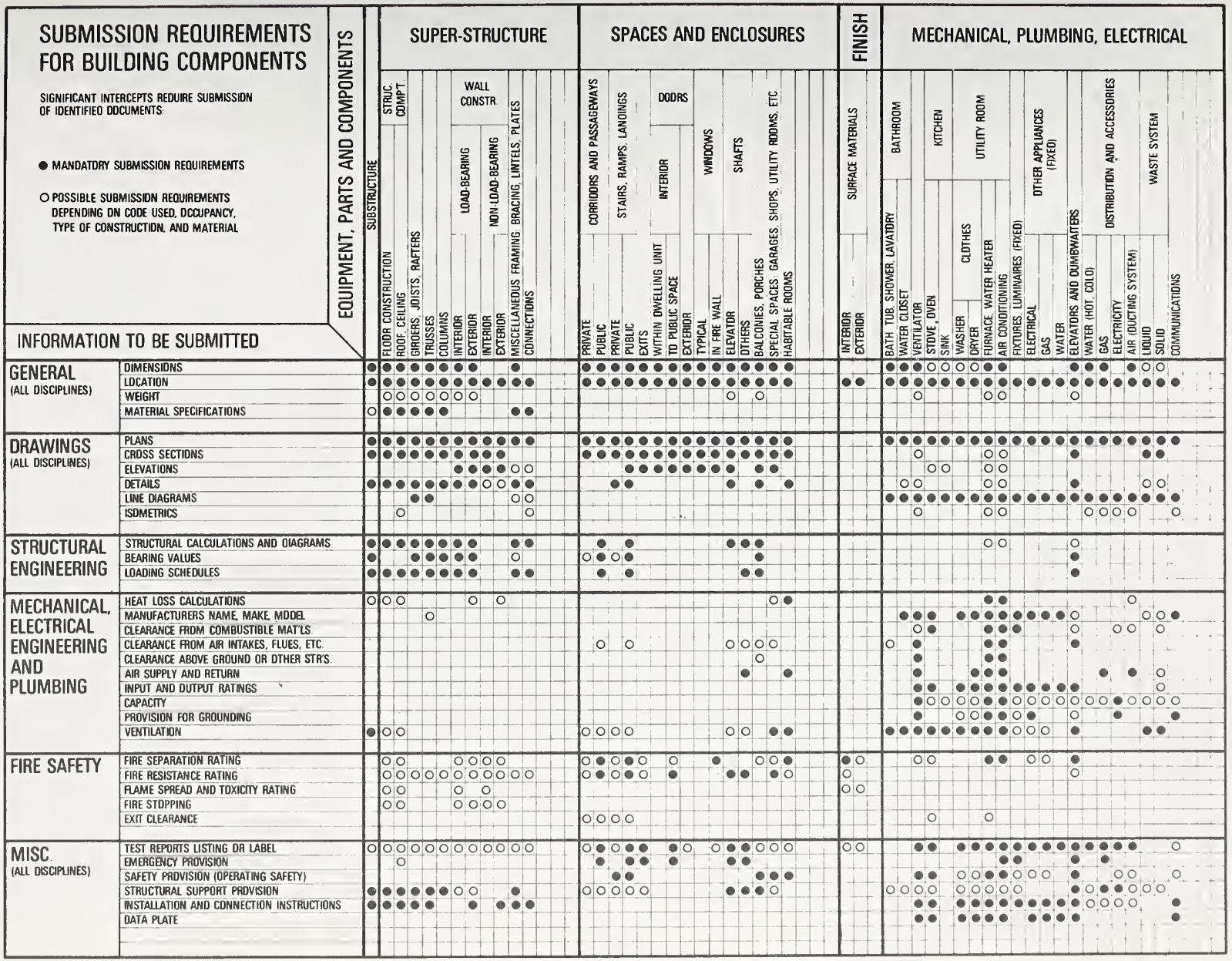
For the electrical services (conduit, cable, and outlet box), the following items should be submitted:

(1) Locations
(2) Plans
(3) Line diagrams
(4) Capacities
(5) Provisions for grounding
(6) Test reports, listing or labelings
(7) Structural support provisions

In addition, the following items may need to be provided, depending on construction type, occupancy, and materials used:

(8) Isometrics
(9) Clearance from combustible materials
(10) Safety provisions (operating safety)
(11) Installation and connection instructions

The specific information to be provided for each of the items listed above is discussed in the submission requirements, CES Documents No. S-03 through S-07 and these should be consulted by the manufacturer in preparing his submission.



SUBMISSION REQUIREMENTS FOR COMPONENTS

c. Compliance Assurance Program

Building system compliance with appropriate codes and standards and with other regulatory criteria does not preclude the possibility of improper materials or workmanship, damage or other shortcomings or deviations resulting from the continuous process of in-plant fabrication, transportation or installation of mass produced units of construction. For these reasons, as well as to provide for preemption of multiple in-plant inspections by various local jurisdictions during the fabrication process, the Model Manufactured Building Act and the Model Rules and Regulations for the Act recognize that the most viable approach to assuring on-going compliance and confidence in unit certifications is through the submission of a manufacturer developed compliance assurance program which is monitored during implementation by an Inspection Agency.

The compliance assurance program requirements to implement the Model Manufactured Building Act and the Model Rules and Regulations for the Act apply directly to all manufacturers requesting approval for production and certification. The specific requirements for the compliance assurance program, which should be documented and submitted in the form of a compliance assurance manual, are enumerated in Part V, Section II of the Model Rules and Regulations and are further interpreted in this section of the report. These same requirements should also extend to and be applicable to any associate or subsystem contractors of the manufacturer or other major suppliers of closed construction components.

It should be noted that while the submission requirements given for the building system (CES Documents No. S-02 through S-08) discuss the format and content of the submission, but not the technical requirements for what constitutes "acceptable" or "conforming" construction, some of the submission requirements for the compliance assurance program do in fact spell out what constitutes an acceptable compliance assurance program. The reason for this difference is given in the fact that the building system is always evaluated for its conformance to a specific code (building, mechanical, plumbing, and/or electrical), but that no code or standard exists at this time to prescribe what an acceptable compliance assurance program is.

The compliance assurance program requirements also apply to Inspection Agencies, whether state or independent third party, and defines their duties and responsibilities in the process of inspecting, monitoring and labeling of manufactured buildings and building components to the extent that the Administrative Agency has delegated any of its inherent duties in accordance with Part IV, Section 4 ("Inspections") of the Model Rules and Regulations.

The Model Rules and Regulations require the establishment, implementation and maintenance of a viable compliance assurance program to continuously assure manufacturer compliance and creditable Inspection Agency certification of the officially approved building system. The compliance assurance program as well as the specific procedures for its implementation relative to controlling the construction compliance of production units of a specific building system type are the individual responsibility of the manufacturer. If the Administrative Agency delegates its inspection

responsibilities, the contractual relationship between the manufacturer and an accredited independent Inspection Agency should not diminish the manufacturer's compliance assurance responsibility.

The joint compliance assurance program of the manufacturer and the Inspection Agency, including administrative procedures, inspection checklists, code compliance workmanship standards, inspection forms, records and labels, should be documented in the form of a compliance assurance manual and submitted to the Administrative Agency for evaluation and approval, or disapproval.

To be effective, the compliance assurance program should be planned and developed in conjunction with the manufacturer's other administrative and technical functions and with the guidance of the Inspection Agency. The program should also give consideration to the rate of production, building system design characteristics, materials of construction, sequence of operations, innovative manufacturing techniques and site installation processes. The program should assure that the required level of code compliance performance is implemented and maintained throughout all areas of plant and site operations that affect regulatory aspects of the construction.

CES Document No. S-09 further defines each of the compliance assurance program submission requirements taken from the Model Rules and Regulations (i.e., Part V, Section II). Each requirement is listed separately within the document and an "Administrative Interpretation" made of what type of response should be contained in the compliance assurance manual submittal. Further clarification of each requirement is offered in a "comments" section. The compliance assurance manual submittal should specifically respond to each enumerated requirement or should provide written justification to omit or alter any particular compliance assurance program requirement which may not apply to a manufacturer's system or mode of operation.

In addition to responding to the above regulatory requirements, the manual should contain certain administrative information as requested under "General Requirements."

SUBMISSION REQUIREMENTS FOR COMPLIANCE ASSURANCE PROGRAMS

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General Requirements

Certain requirements and administrative information are basic to the preparation and submission of the compliance assurance manual. This additional information is defined as follows and should be reflected in submitted compliance assurance manuals. (Note: The Administrative Agency should specify the number of copies of the compliance assurance manual to be submitted.)

(1) Name and address of Inspection Agency should be indicated. Also, if not submitted separately, detailed qualifications of the Inspection Agency should be presented.

(2) Approval of compliance assurance manual by the Inspection Agency with date of approval should be indicated on a cover sheet to the manual.

(3) The compliance assurance manual should be properly indexed to all regulatory requirements and all pages of the manual consecutively numbered.

(4) The individual plant name and manufacturer location to which the manual applies should be indicated.

(5) The manual should contain copies of all inspection forms, records, checklists, labels, tags, stamps, insignia, etc., for both the manufacturer and Inspection Agency along with their intended usage for compliance assurance program activities.

(6) The manual should also contain a brief statement in the form of an introduction to the manual to describe the type of manufactured buildings or components to be produced, inspected and certified along with the purpose for the compliance assurance manual in the overall control of construction leading to production unit certification.

(7) The compliance assurance manual should contain either a copy of the contract between the manufacturer and the Inspection Agency or an official signed statement by a responsible officer of the manufacturer that such an agreement is in force and effect.

In addition to the above, organization of the compliance assurance manual should provide for the following:

(1) A space of 3 inch by 4 inch should be provided on the cover sheet of the compliance assurance manual for affixing the Approval Stamp of the Evaluation Agency. A margin of 1 inch should be provided on each following page for affixing the Alternate Approval Stamp.

(2) Compliance assurance manuals should be in such a form that individual pages may be readily removed or replaced.

Revision of Compliance Assurance Manual

Citation. Part V, Section 2(A)(1), "A procedure for periodic revision of the manual".

Administrative Interpretation. It is essential that all approved changes and the resultant additions or deletions to inspection procedures and inspection checklists affecting construction control be made available to the appropriate inspection personnel (i.e., manufacturer or Inspection Agency) and that all such changes be documented as revisions to the compliance assurance manual.

The compliance assurance manual should contain a formalized procedure covering the following points:

(1) All changes to the compliance assurance manual should be submitted to the Administrative Agency within ten (10) days of the change.

(2) Changes in the manufacturer's portion of the compliance assurance manual should be accompanied by any required changes in the Inspection Agency's portion of the manual.

(3) The compliance assurance manual should be formally reviewed at least every three (3) months by the manufacturer and the Inspection Agency and be updated as required.

Comment. The compliance manual should be updated periodically as changes and additions to the manufacturer's and Inspection Agency's programs occur and modifications to the approved building system are made. Any revisions to the manufacturer compliance control program should be coordinated with the Inspection Agency and include their concurrence. Also, any changes in name, address, ownership or location per Part IV, Section 7(A) and (B) of the Rules and Regulations may affect an approved compliance assurance manual and thus require its revision and resubmission. Either CES Documents No. S-01 or S-10 should be used when making application for modifications to an approved compliance assurance program.

Organizational Structure

Citation. Part V, Section 2(A)(2), "An organizational structure for implementing and maintaining the compliance assurance program and its functional relationship to other elements of the organization structure of the manufacturer, which structure shall provide for independence from the production department".

Administrative Interpretation. The manufacturer and the Inspection Agency should each maintain an authoritative and effective organizational element as the focal point for the compliance assurance program.

To be totally effective, the manufacturer's compliance control activity should be an independent activity, such that the plant officer responsible for implementing and maintaining construction compliance is free of any functional obligations with respect to production management that could potentially compromise compliance.

The compliance assurance manual should provide the following:

(1) A chart depicting the manufacturer's organizational setting and functional relationships for compliance control and production responsibilities should be included. The chart should indicate where and by whom coordination with the Inspection Agency should be carried out.

(2) A current functional statement in the form of a directive signed by the plant manager should be included which defines the functional obligation, responsibility and authority of the manufacturer's compliance control activity or, as appropriate, those of the Inspection Agency.

Comment. Of utmost consequence to the overall effectiveness of the compliance assurance program is the organizational freedom and authority to:

(1) Continuously detect actual or potential deviations, marginal code compliance workmanship and trends or conditions which could result in noncompliances;

(2) Objectively assess, document and report findings during all phases of construction;

(3) Obtain any required corrective actions to preclude recurrence of noncompliances;

(4) If necessary, refuse to attach labels to noncompliant units of production until such units have been brought into compliance.

Training and Qualifications

Citation. Part V, Section 2(A)(2)(a), "Company officers and employees in charge of the compliance assurance program must be identified, and their training and qualifications specified".

Administrative Interpretation. Regardless of plant size, adequately trained and qualified personnel to implement and maintain compliance are necessary.

In response to this requirement, the compliance assurance manual should provide the following:

(1) Identification of the individual responsible for directing the manufacturer's compliance control program along with that person's background qualifications and training. If not the same person, the manufacturer should also identify the individual who will be responsible for the receipt, control and attachment of labels when not directly controlled by the Inspection Agency.

(2) Job descriptions prescribing minimum qualifications and training requirements for individuals responsible for compliance control or who make accept/reject determinations with respect to code compliance of the construction.

(3) For each job description above, a brief background summary in the form of a resume' should be provided outlining the educational background, experience, job training, licenses held and any other qualifications of individual personnel assigned to maintain compliance.

(4) The extent of any training activities to be provided in collaboration with the Inspection Agency should be indicated.

Comment. Training and qualification requirements for compliance personnel should give consideration to the following technical factors:

(1) Ability to read and understand drawings, specifications and inspection checklists defining the dimensions and assemblage of manufactured buildings or components and the physical properties required thereof.

(2) Familiarity with the appropriate acceptance tolerances, standards and codes and the ability and skill levels required to objectively inspect buildings or components for code compliance, dimensional accuracy, and intended function.

(3) Capability to understand and use appropriate inspection and production test equipment.

Uniform System of Audits

Citation. Part V, Section 2(A)(3), "A uniform system of audit (in-depth analysis of program effectiveness and means to identify deficiencies) to monitor program performance periodically".

Administrative Interpretation. The Inspection Agency and the manufacturer should audit the adequacy of the compliance assurance program on a periodic basis of at least once a month. A summary report of such audits along with any corrective actions taken by the manufacturer should be prepared by the Inspection Agency on at least a quarterly basis and submitted to the Administrative Agency.

Audits should include, in addition to assessing construction compliance, an examination of compliance assurance procedures, inspection checklists, process controls and inspection records as well as implementing corrective actions to correct all identified noncompliances.

The compliance assurance manual should provide the manufacturer's and/or Inspection Agency's checklists for conducting audits and the procedures for reporting audit findings and corrective actions to the Administrative Agency.

Comment. An example of an audit examination of a production operation would include:

(1) An inspection of production units from that station for construction compliance;

(2) An examination of the adequacy of required documentation (e.g., inspection checklists, code compliance workmanship standards, etc.);

(3) A determination of the familiarity of operator and supervisory personnel with compliance to required documentation;

(4) A review of any prior corrective actions taken;

(5) An evaluation of the adequacy of applicable accept/reject criteria.

Compliance Records

Citation. Part V, Section 2(A)(4), "Complete and reliable records of manufacturing and site operations, if any (suitable means of storage, preservation and accessability of copies of forms to be utilized shall be included)."

Administrative Interpretation. Records are considered one of the principal forms of objective evidence of compliance and as such the manufacturer and the Inspection Agency should assure that records are complete and reliable. Compliance records, test reports and laboratory analyses should be available for review by the Administrative Agency and copies of individual records should be furnished upon request.

The manufacturer and the Inspection Agency should maintain their respective compliance records on file and specify in the compliance assurance manual where such records (or logbooks) will be available for inspection for a minimum period of time as may be required by the Administrative Agency.

The compliance assurance manual should also provide the basis upon which the manufacturer and the Inspection Agency systematically analyze and use records as a means for management action and should include the procedure for assuring the availability, currency, completeness and accuracy of compliance records.

Comment. Individual compliance records should provide evidence that required inspections and production tests have been performed, including component or subsystem identification, unit serial number, inspection or production test involved, inspection characteristics, number of compliant items, number of noncompliant items, nature of code noncompliances, basic causes for rejection and date of inspection. When inspections or production tests so require, the actual measurements or observations obtained should be indicated and provision for representatives from the Inspection Agency who witness non-routine tests to so indicate such action.

Control of Changes

Citation. Part V, Section 2(A)(5), "A system to control changes in production or inspection procedures".

Administrative Interpretation. The manufacturer and the Inspection Agency should ensure that manufactured buildings or components are fabricated, inspected and production tested to the latest approved building system drawings and specifications. Necessary changes should be approved and so evidenced on applicable production documents and inspection checklists.

The compliance assurance manual should provide a procedure by which the manufacturer and the Inspection Agency can formally control all documents affecting construction compliance and for the incorporation of approved changes to such documents.

Comment. Applicable compliance documentation may include:

(1) The approved building system;

(2) Applicable fabrication or shop-level drawings (e.g., working drawings);

(3) Inspection checklists.

Revised documentation should indicate by special notation all items approved for change together with the effective date of change and reference to the source approval document that initiated the change.

The manufacturer should assure that all documents affecting construction compliance are distributed to the proper personnel at the proper times in order to assure that all inspection functions, including Inspection Agency activities, are accomplished in accordance with the latest approved documents. The manufacturer's system should also provide for the prompt removal of all obsolete drawings and changed requirements from points of issue and use.

Control of Working Drawings

Citation. Part V, Section 2(A)(6), "A system to assure that working drawings and specifications, working instructions and standards, procurement documents, etc., conform to the approved building system".

Administrative Interpretation. Subsequent to the approval of the building system documents by the Administrative Agency as substantiating the adequacy of the manufactured building units to be constructed, it is common practice for some manufacturers to prepare fabrication or shop drawings. The purpose of these drawings is to make maximum use of the materials and effort used to construct the units by delineating detailed layout schemes to be followed by production operators. Such drawings and any subsequent changes thereto should be formally reviewed for compliance with the approved building system. The reviews should be performed by a person other than the one preparing the shop drawing.

The procedure by which working drawings, working instructions and standards and other implementing documents are reviewed for compliance and formally controlled should be defined in the compliance assurance manual.

Comment. It is recommended that inspectors (manufacturer or Inspection Agency) not use shop level or working drawings that have not been approved by the Administrative Agency in conjunction with the system being inspected. To maintain independence from any influence of the manufacturer's organization, Inspection Agency compliance inspections and audits should be made on the basis of the information contained in the approved building system.

Serial Numbering System

Citation. Part V, Section 2(A)(7), "A serial numbering system for buildings or building components".

Administrative Interpretation. Each unit of production to be certified should be assigned an individual serial number. This serial number should be permanently attached to the unit in a uniform accessible location at the early stages of construction.

The compliance assurance manual should indicate the manufacturer's system of individually serializing each unit of production to be certified and should identify the point in the production flow at which serial numbers will be applied.

Comment. Any inspection records or production travellers used as part of the manufacturing process and which are unique to individual units of production should bear the serial number of the unit to which it applies. The use of lot or batch numbers may be more practical for control and identification purposes of high production volume components not requiring individual data plates.

Control of Labels

Citation. Part V, Section 2(A)(8), "The method of safekeeping, handling and attaching labels and identification of those employees responsible therefor".

Administrative Interpretation. Labels should be under the direct control of the Inspection Agency and should only be applied to compliant units by the manufacturer's personnel after the manufacturer's production process consistently produces compliant units and the compliance control efforts of the manufacturer are capable of assuring on-going compliance.

The compliance assurance manual should identify the Inspection Agency employees with responsibility for release of labels and, if possession of labels is granted the manufacturer in accordance with Part IV, Section 3(B)(2)(d) of the Model Rules and Regulations, the identification and background qualifications of the manufacturer's representative who will have custody of labels. The manual should also stipulate the specific procedures and controls to be utilized by both the Inspection Agency and the manufacturer for the issuance, handling, possession, safekeeping, procurement and records of attachment, damage or misuse of labels. When possession of labels is granted the manufacturer's personnel in accordance with the Rules and Regulations, the method by which the Inspection Agency replenishes a manufacturer's supply of required labels should be controlled and the methodology outlined in the compliance assurance manual.

Comment. Labels should be serially numbered and individually accounted for by the Inspection Agency to the Administrative Agency. This should be accomplished through a Label Control Record (CES Document No. C-08) which cross-references each label with the serial number of the manufactured building or component to which it is affixed and gives an approximate date of usage.

Final inspection should include a check that labels are affixed to units in a manner that precludes removal and are located as indicated by the approved building system.

Control of Procurement

Citation. Part V, Section 2(B)(1), "Procedures to assure effective control over procurement sources to ensure that materials, supplies and other items used in production and site operations, if any, conform to the approved plans, specifications and quality requirements".

Administrative Interpretation. The manufacturer is responsible for the adequacy and compliance of all purchased or subcontracted construction materials including; as appropriate, raw materials, building components, subsystems, and equipment. The selection of procurement sources and the nature and extent of control to be exercised by the manufacturer is dependent upon the particular type of materials, products or services, the supplier's demonstrated capability to perform, and the objective evidence of compliance made available.

The compliance assurance manual should define the manufacturer's procedure for ensuring the adequacy and control of procured building components, materials, products and services including procedures for selection of qualified sources, incorporation of all applicable design, code compliance workmanship standards and associated compliance requirements in subcontracts and purchase orders.

Comment. To assure an adequate and economical control of procured materials and products, the manufacturer should utilize to the fullest extent, objective evidence of compliance furnished by suppliers and subcontractors (e.g., building components, subsystems, equipment, etc., acceptance labeled by an approved inspection agency; product approvals and listings by UL, ICBO, BOCA, etc.; building and construction industry grade marks for materials; and similar recognized programs that promulgate, regulate or enforce standards).

Receiving Inspection

Citation. Part V, Section 2(B)(2), "Procedures for inspection of materials, supplies and other items at the point of receipt".

Administrative Interpretation. The manufacturer should ensure that subcontracted or purchased building components, materials and products to be incorporated into the regulated aspects of the construction are subjected to compliance inspection upon receipt, as necessary, to verify conformance to applicable purchase orders, drawings and specifications, catalog descriptions, industry standards, etc. Receiving inspection verification checks may include, as appropriate, examination for damages due to shipment and handling, visual inspections, physical and dimensional checks, and any functional tests needed to assure compliance.

The compliance assurance manual should contain instructions and inspection checklists for conducting receiving inspections. Receiving inspection instructions should specify any sampling inspection techniques, special methods of inspection or test, and the applicable accept/reject criteria for each inspection characteristic.

Comment. Manufacturer receiving inspections should complement and supplement procurement source compliance control, industry standards, recognized product and materials approvals, agency listing and labeling programs, etc., rather than ignore or unnecessarily duplicate such accepted measures of control. Appropriate procured materials and products should bear evidence of such approvals or be accompanied with required data, specimens, test reports, certifications, laboratory analyses, etc.

Protection of Materials

Citation. Part V, Section 2(B)(3), "Method of protection of materials, supplies and other items against deterioration prior to their incorporation in the certified buildings or building component".

Administrative Interpretation. Manufacturer instructions should designate how purchased items and raw materials are to be stored, including the degree of weather protection to be furnished. Included should be directions on the support of the item, the protection from mechanical damage, and any special controls for the temperature, humidity, or exposure to sunlight, where these conditions could adversely affect the performance of the item or material.

The compliance assurance manual should contain any manufacturer instructions or inspection checklists necessary for the protection of materials against deterioration.

Comment. Manufacturer stores, warehouses and other storage facilities for raw materials, components and in-process work should be adequate for the type of certified building or building component being produced. All such materials should be adequately protected from weather, corrosion, deterioration, mechanical damage and other adverse conditions. Materials having definite characteristics of degradation with age and/or exposure should be marked to indicate the useful life and expiration date.

Disposition of Rejected Materials

Citation. Part V, Section 2(B)(4), "Provision for disposal of rejected materials, supplies and other items".

Administrative Interpretation. The manufacturer should establish and maintain an effective and positive system for controlling nonconforming material, including procedures for its identification, segregation, and disposition. Repair or rework of nonconforming material should be in accordance with approved manufacturer procedures. Information should be included regarding the procedures to be followed with respect to materials that have been damaged, such as the necessity to regrade or test materials that have been exposed to excessive moisture.

The compliance assurance manual should include the procedure to be followed regarding the identification and disposition of rejected materials, supplies and other items to be incorporated into the regulated aspects of the construction.

Comment. All nonconforming materials should be positively identified and segregated to prevent unauthorized use, release to production or co-mingling with conforming materials. The manufacturer should maintain a positive system for identifying the inspection status of materials, components, subassemblies, etc.

Corrective Action

Citation. Part V, Section 2 (C)(1), "Procedures for timely remedial and preventive measures to assure product quality".

Administrative Interpretation. The compliance assurance program should detect and promptly correct assignable conditions adverse to construction compliance.

A procedure should be contained in the compliance assurance manual which defines the corrective action program for all major noncompliances, failures, and critical latent defects discovered by the manufacturer, the Inspection Agency or other state and regulatory agency inspections and tests in-plant, during and after site installation.

Comment. Segregating noncompliant construction from acceptable units of production is not enough for an effective compliance assurance program; the cause of the noncompliant condition must be found and corrected. Occasionally the cause of infrequent or non-repetitive noncompliances cannot be determined and the only action possible is to reject and repair or rework the defective items.

Testing and Inspection Equipment

Citation. Part V, Section 2(C)(2), "Provision, maintenance and use of testing and inspection equipment to assure compliance with the approved building system".

Administrative Interpretation. The manufacturer's compliance control program should include and provide maintenance for suitable inspection, measuring, and production test equipment necessary for compliance assurance activities. Appropriate records of equipment calibration or maintenance checks should be maintained current. The due date or other identification attesting the due date of the next required calibration or maintenance check should be displayed on each applicable item of inspection, measuring, and production test equipment or control device.

The compliance assurance manual should identify each item of required testing and inspection equipment and the station or point in the production process each will be used. The procedure by which such equipment should be periodically validated for accuracy should also be included.

Comment. Such measurement devices as pressure gauges, compression and tensile test machines, weighing scales, leak detectors, temperature indicators and control equipment, moisture meters, dial indicators, etc. should be initially calibrated against certified measurement standards, and at established intervals thereafter to assure continued measurement accuracy. The objective is to assure that any necessary inspection and production test equipment or control device is adjusted, replaced or repaired before it becomes inaccurate.

Frequency of Inspection

Citation. Part V, Section 2(C)(3), "Provision for frequency of sampling inspections".

Administrative Interpretation. The frequency of Inspection Agency audit inspections should consider various factors, each of which affects the overall construction compliance of manufactured buildings or building components. Among these influencing factors are: production volume; design complexity of units; the qualifications of the manufacturer's own in-house compliance control organization; and the experience record of the manufacturer.

It is important to note, and for the manufacturer's compliance control personnel to understand, that the audit inspections by the Inspection Agency personnel are to serve only as a verification of the manufacturer's program. Performance and viability of the overall compliance assurance program depends entirely on the conscientious efforts of the manufacturer's personnel.

The frequency of inspection by the Inspection Agency should be no greater than that necessary to assure construction compliance. An approach toward accomplishing an adjustable frequency of inspection based on construction compliance performance of the manufacturer is outlined in the commentary to this requirement. Based on the estimated or average daily (or weekly) rate of manufacturing, the frequency of inspection coverage, including criteria for recommending possible adjustments, to be provided by the Inspection Agency should be outlined in procedure form in the compliance assurance manual.

Comment. Based upon existing inspection practices, a suggested inspection frequency should initially provide at least one inspection by the Inspection Agency of all four of the major subsystems (i.e., structural, mechanical, plumbing and electrical) on each unit produced (100% inspection); with no less than one inspection visit per month to maintain proper record keeping and reports to the Administrative Agency. As the construction compliance performance of the manufacturer improves (e.g., the number and severity of code violations decreases), an adjustment of the sampling rate (i.e., frequency of inspection) should be implemented by the Inspection Agency and the Administrative Agency so notified.

A reduction in the frequency of inspection can be based on one of three concepts: (1) inspecting every construction item on one unit, but not inspecting all units, e.g. inspection of every construction item on one unit out of four constitutes a 25% inspection frequency; (2) inspecting some, but not all construction items on each production unit, e.g. inspection of one quarter of all construction items on each production unit also constitutes a 25% inspection frequency; (3) in practice, a combination of the two above concepts may be more appropriate to a particular fabrication process and plant layout. Regardless of the sampling method and the frequency of inspection required, it is suggested that: (1) not less than one out of ten consecutive units be inspected; and (2) within ten consecutive units each construction feature should be inspected at least once. The purpose of these limitations is to assure an even and reasonable

distribution of the units inspected, so as to prevent the Inspection Agency, for example, from achieving 25% inspection frequency by inspecting 25 consecutive units out of 100 units and leaving the next 75 units uninspected.

A suggested minimum approach to frequency of inspection for manufactured buildings which allows for fluctuations in degree of construction compliance by the manufacturer is offered by the following description of a multilevel sampling inspection process. The process is illustrated by the diagram in figure 1. It should be pointed out that the inspection frequencies suggested herein and by the accompanying diagram are not necessarily applicable to building components. It is likely that construction of building components could be regulated through the use of sampling rates substantially lower than those suggested herein.

Inspections are initiated by 100% agency inspections of a prescribed number of production units (several states require that at least the first ten units be examined). During this period of full time inspection activity, the Inspection Agency should also evaluate the competency of the manufacturer's compliance control organization to produce units in compliance with the approved building system and compliance assurance manual. This evaluation should give consideration to noncompliant conditions detected, satisfactorily corrected to preclude recurrence, and documented through implementation of the manufacturer's own compliance control program and prior to discovery of such conditions by Inspection Agency personnel.

At such time as the manufacturer's process consistently produces compliant units, Inspection Agency full time coverage may be reduced to a periodic (e.g., 50%) inspection surveillance program. Inspection Agency plant visits for such surveillance inspections should be on a random unannounced basis.

When major construction noncompliances are detected solely by the Inspection Agency during audit inspections at the first sampling rate (e.g., 50%), the Agency inspectors should backtrack and inspect all units produced prior to the unit found deficient and subsequent to the last unit previously inspected. Also, according to the sampling process, audit inspections return to the 100% level for the next M units or production as depicted in the flow diagram in figure 1.

If the M units are compliant, then periodic audit inspections may be resumed as before. Audit inspection coverage may even be reduced further to the second level sampling rate (e.g., 25%) when a prescribed number of production units (e.g. ten) are found in compliance at the first sampling rate. The same conditions apply as above for shifting from one sampling rate to a lower sampling rate. When noncompliant production is found by the Inspection Agency, the frequency of inspection has to be increased or could possibly return to full-time inspection coverage.

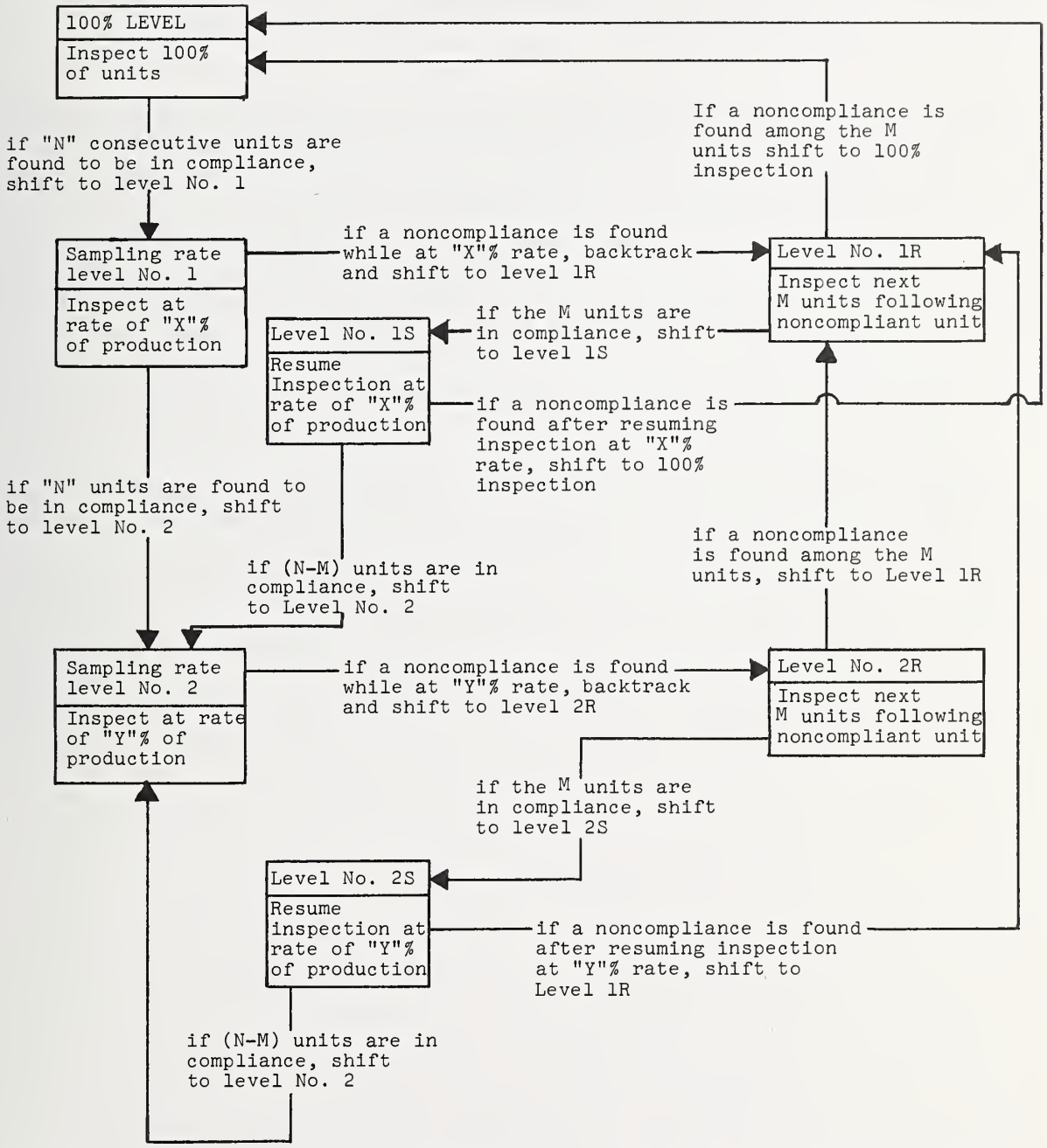
It is recommended that before the Inspection Agency reduces its inspections at any of the above levels notice should be sent to the Administrative Agency of such action.

FIGURE 1

FLOW DIAGRAM

MULTILEVEL SAMPLING INSPECTIONS

BY INSPECTION AGENCY


100% LEVEL
Inspect 100% of units
if "N" consecutive units are found to be in compliance, shift to level No. 1
If a noncompliance is found among the M units shift to 100% inspection
Sampling rate level No. 1
Inspect at rate of "X"% of production
if a noncompliance is found while at "X"% rate, backtrack and shift to level 1R
Level No. 1R
Inspect next M units following noncompliant unit
Level No. 1S
Resume Inspection at rate of "X"% of production
if the M units are in compliance, shift to level 1S
if a noncompliance is found after resuming inspection at "X"% rate, shift to 100% inspection
if "N" units are found to be in compliance, shift to level No. 2
if (N-M) units are in compliance, shift to Level No. 2
if a noncompliance is found among the M units, shift to Level 1R
Sampling rate level No. 2
Inspect at rate of "Y"% of production
if a noncompliance is found while at "Y"% rate, backtrack and shift to level 2R
Level No. 2R
Inspect next M units following noncompliant unit
if the M units are in compliance, shift to level 2S
Level No. 2S
Resume inspection at rate of "Y"% of production
if a noncompliance is found after resuming inspection at "Y"% rate, shift to Level 1R
if (N-M) units are in compliance, shift to level No. 2

KEY "N": Number of production units inspected at 100% frequency (e.g., N = 10)

"M": Number of production units inspected at levels No. 1R and 2R, but less than N (e.g., M = 5)

"X": First sampling rate after leaving 100% inspection (e.g., X = 50%)

"Y": Second sampling rate after leaving "X" sampling rate (e.g., Y = 25%)

Authority for Compliance Assurance

Citation. Part V, Section 2(C)(4), "Provision of necessary authority to reject defective work and carry out compliance assurance functions, notwithstanding any conflict with production department goals and needs".

Administrative Interpretation. The compliance assurance activities of the manufacturer's compliance control organization and the Inspection Agency should not be overridden in any form by plant or site construction schedules or other needs, goals or functions of the manufacturer's production department.

The compliance assurance manual should contain a provision whereby the manufacturer's compliance control activity or the Inspection Agency have the authority to reject noncompliant construction of all regulated aspects of the building system and to refuse to attach labels to such units of production until such time as they have been brought into compliance. This authority should also include the provision for the Inspection Agency to inspect all units produced prior to the unit found deficient and subsequent to the last unit previously inspected by the Inspection Agency.

Comment: Response to the requirement in the compliance assurance manual should also be in accord with the response submitted to that for the "Organizational Structure" (e.g., Part V, Section 2(A)(2) of the Model Rules and Regulations).

Production Flow Diagrams

Citation. Part V, Section 2(C)(5), "A schematic of the manufacturing operation showing the location of inspection stations, and "hold" points for mandatory inspection characteristics".

Administrative Interpretation. Material flow charts, production sequence diagrams and/or plant layout diagrams should be included in the compliance assurance manual. The sequence, type and frequency of manufacturer and Inspection Agency inspection, production test and labeling points, including those for materials receipt and storage, should be specifically indicated on material flow charts or plant layout diagrams showing the production flow of all fabrication and assembly operations. Inspection Agency control points should be identified separately, but should be correlated with the number and descriptive title of the manufacturer's designations. The individual In-Plant Inspection Checklists (CES Document No. C-02) for each station should correspond with the production sequence indicated on flow diagrams.

Mandatory inspection characteristics (i.e., those critical inspection characteristics of the construction which if not in compliance up to a certain point in the production sequence, cannot later be corrected and will thus jeopardize life and safety) and their respective "hold" points should also be individually designated.

Comment. Production flow diagrams should be supplemented by estimated or average daily (or weekly) rate of manufacturing and shipment of units. The Inspection Agency should attest to its capabilities and available resources in support of the compliance assurance inspection and labeling aspects of such schedules. The Inspection Agency should also indicate the degree of inspection coverage to be provided during multiple shift plant operations or other periods of extended plant operations.

Inspection Checklists

Citation. Part V, Section 2(C)(6), "Inspection and test procedures, including accept/reject criteria and mandatory inspection characteristics".

Administrative Interpretation. The In-Plant Inspection Checklists (reference CES Document No. C-02) should be jointly developed by the manufacturer and the Inspection Agency for the particular system to be produced. These checklists, which should serve as the basis for manufacturer compliance control inspections and Inspection Agency monitoring evaluations, should be submitted as part of the compliance assurance manual. Individual inspection and test procedures should bear evidence of Inspection Agency concurrence and should be production station oriented in accordance with the sequence outlined in the Production Flow Diagrams (reference Part V, Section 2(C)(5)) submitted with the compliance assurance manual.

Comment. For production testing, detailed procedures should be prepared describing each step in the testing process, the recording of results, the method of determining compliance including permissable tolerances and the frequency of testing. Procedures should include identification of the test equipment to be used, and, where applicable, the means to be used in determining that it is properly calibrated. The procedures should be of sufficient detail that they can serve as checklists.

Code Compliance Workmanship Standards

Citation. Part V, Section 2(C)(7), "Standards of workmanship".

Administrative Interpretation. The manufacturer in conjunction with the Inspection Agency should provide any necessary code compliance workmanship standards to supplement or complement acceptance standards referenced by codes, drawings, specifications or inspection checklists. Such workmanship standards should compliment accepted codes and industry standards and may be in the form of models, work samples, visual aids, photographs or sketches prepared to assist production and inspection personnel.

The compliance assurance manual should contain any necessary code compliance workmanship standards.

Comment. Code compliance workmanship standards should be developed to describe those inspection characteristics of the construction that are difficult to quantify or describe. When design changes are initiated and approved, affected code compliance workmanship standards should be reviewed and replaced as necessary.

Disposition of Noncompliant Construction

Citation. Part V, Section 2(C)(8), "Provision for disposal of rejects".

Administrative Interpretation. This provision is similar to Part V, Section 2(B)(4) of the Model Rules and Regulations, "Disposition of Rejected Materials", except that this requirement addresses noncompliant construction during the production process.

The procedure in the compliance assurance manual covering the disposition of rejected materials may be expanded to also cover noncompliant construction or, if necessary, a separate procedure for control of construction noncompliances may be included.

Comment. There should be a method of physically identifying construction deficiencies by attaching a piece of flagging or a tag to the item or element in question. This identification should be removed by the person responsible for signing off that element of the construction only when the construction deficiency has been corrected. The inspection form accompanying the unit should contain a notation for all but minor deficiencies that are readily corrected, to provide the means of communicating the effectiveness of the manufacturer's compliance control efforts to the Inspection Agency. Noncompliant units should be identified and their disposition noted in the compliance record as required in Part V, Section 2(A)(4), discussed on page 7 of this document (page 35 of this report volume).

Final Inspection and Certification

Citation. Part V, Section 2(D)(1), "Procedures for final inspection of all manufactured buildings or building components before shipment to the site or storage point, including identification and labeling".

Administrative Interpretation. The compliance assurance manual should provide a procedure for final in-plant inspection (or final production test, if necessary) of all completed manufactured buildings or building components prior to shipment to building sites, staging areas or storage points. In-plant final inspection checklists should provide for verifying that the officially approved certification label and the manufacturer's data plate, as applicable, have been properly affixed in the correct location and that labels, whether applied by the manufacturer or the Inspection Agency, are formally controlled and records maintained on label usage. Labels and data plates should be checked to ensure that they bear correct information and that removal of the label cannot be accomplished without destruction.

Comment. Proper unit identification and final inspection status of completed units should be readily determinable from identification markings and inspection records. Individual unit inspection records should be verified and retained by the manufacturer or Inspection Agency in accordance with the procedure on "Compliance Records", Part V, Section 2(A)(4) in the compliance assurance manual.

Handling and Storage

Citation. Part V, Section 2(D)(2), "Procedures for handling and storing all finished manufactured buildings or building components, both at the manufacturing plant or other storage point and after delivery to the building site".

Administrative Interpretation. The procedures for handling the finished buildings or components should be described in detail, including a description of all equipment to be used, giving capacity and any other pertinent data required to document suitable handling. Handling equipment and fixtures should be capable of performing the specific task for which selected. Equipment should be proof-loaded and test operated prior to actual manufactured building or component lift to verify capabilities.

If certified manufactured buildings or components are to be stored outside any time between leaving the last fabrication station and site installation, proper precautions should be documented to ensure that the finished product can not deteriorate due to the influence of adverse weather conditions, including humidity, heat and cold, wind forces, etc. The environmental protection should permit access of a compliance assurance inspector to periodically examine the interior for water or weather damage or other degradation. The frequency of inspection should depend upon local conditions and should be indicated in the compliance assurance manual.

Comment: Storage plans should give consideration to:

(1) Water ponding or infiltration on roofs, sides or bottom of units;

(2) Excessive humidity levels caused by improper ventilation;

(3) Cracking or racking caused by storing on an un-level surface, by too great a span length between supports, or by over-stacking of units.

(4) Exposure to high wind forces or other unfavorable weather conditions which could damage the building or component.

Packing, Packaging and Shipping

Citation. Part V, Section 2(D)(3), "Procedures for packing, packaging and shipping operations and related inspections".

Administrative Interpretation. After final in-plant inspection, all operations required for cleaning, preservation, packaging, packing, skidding, loading, blocking and bracing aboard the transporter, as appropriate to the type of unit, should be monitored as part of the compliance assurance program. The purpose of these activities is to ensure that deliverable manufactured units are protected against damage or deterioration due to adverse environmental factors or shipping.

The compliance assurance manual should include, as appropriate, those inspection characteristics that identify precautionary measures to protect plumbing, mechanical and electrical subsystems and included appliances and fixtures from damage. In many instances design considerations or minimal protection devices installed into the manufactured building or component's construction during the production cycle can effectively minimize normal shock and vibration damage.

Pre-transport compliance inspections should assure that all internal packaging and parts protection has been properly accomplished and that "ship-loose" items are fully secured.

Comment. If manufactured buildings or components have been in storage between the time of final in-plant inspection and packaging (i.e., three weeks in winter environments; six weeks in other environments), a re-inspection prior to shipping should be performed to verify that the manufactured buildings or components are in fact still in compliance.

Transportation

Citation. Part V, Section 2(D)(4), "Procedures for transportation, including all measures to protect against damage while in transit, and setting forth the modes of transportation to be utilized and the carrying equipment and procedures".

Administrative Interpretation. Procedures should be outlined in the compliance assurance manual to ensure that during the in-transit phase, which occurs between the final station on the plant assembly line and the actual installation of the unit at the site, adequate precautions are taken to protect the compliance integrity of manufactured buildings or building components.

In-transit and/or on-site verification checks should ensure that the manufactured building or component has suffered no damage during hauling and transport. Construction site receiving inspection reports or other documentary evidence to this effect should be available for submission to local enforcement agencies or the Inspection Agency, if necessary.

Comment. The transporter should not impose excessive shock or vibration loads to the manufactured building or component. Appropriate shock and vibration absorption devices should be employed where necessary to dampen such adverse forces to preclude damage to transported units.

Provision for transportation and delivery may be under the cognizance of commercial carriers or other subcontractors, but such arrangements should include conformance with all regulatory requirements as well as protection of the construction compliance integrity of manufactured buildings or components.

Installation Control

Citation. Part V, Section 2(E)(1), "Installation procedures including component placement, equipment and procedures, field erection and finishing work, utility connection instructions and all appropriate on-site inspection criteria and test descriptions".

Administrative Interpretation. Construction compliance for this aspect of the work should be the responsibility of the builder/erector who may or may not be the manufacturer. The compliance assurance program should clearly define the procedures which will indicate compliance of the site installed certified manufactured building or component to the codes and standards which formed the basis of the certification. The procedures should indicate the scope and frequency of installation inspections and should include inspection checklists with applicable criteria and any functional testing techniques indicated. Inspection procedures for installation control should be made available to local enforcement agencies.

Comment. The inspection procedures to be established by the manufacturer should recognize and provide for the susceptibility of the manufactured building or component to incorrect installation resulting in code related deficiencies. The procedures also will depend on the location of the interface between the manufactured building or component and the site installed provisions for its erection. For example, if the foundations are a part of the manufactured and certified unit, soil bearing characteristics directly affect the performance of the unit in service and thus must be included in the inspection provisions. However, the inspection procedures for a manufactured roof component designed and certified to be installed on load bearing walls which are not a part of the certified unit will have to include the load bearing characteristics of the walls, but not the soil bearing characteristics which are necessary to properly support the site erected walls. It should be understood that the omission of any item of installation control in the manufacturer's compliance assurance manual does not relieve the builder/erector from complying with any local requirement for such items.

According to the above discussion, the following list of items may have to be considered in the development of on-site installation procedures and inspections.

(1) Site work

Where specific site work is a precondition for the proper in-service performance of the manufactured building or component, such site work or site related investigations should be detailed in the manufacturer's installation instructions. Examples of such items are:

(a) Soil bearing value
(b) Frost line
(c) Ground water table
(d) Chemical and physical soil characteristics
(e) Surface water drainage
(f) Topography, slope, and other site related considerations

(2) Foundations and Substructure

Where the in-service performance of a manufactured building or component is dependent on specific foundation characteristics, such characteristics and their determination should be detailed in the manufacturer's installation instructions. Examples of such items are:

(a) Accuracy of horizontal and vertical foundation layout.

(b) Size, dimension, and reinforcement of footings, pilings, etc.

(c) Size, dimension, material, and reinforcement of foundation walls, slabs, etc.

(d) Clearances from utility lines.

(e) Location and layout, including dimensional tolerances, for key ways, anchor bolts, sleeves, and other items imbedded in or integral with the foundations.

(f) Provisions for testing concrete and pilings.

(g) Provisions for testing fabricated items such as reinforcing steel, anchor devices, etc.

(3) Utilities and Services

The proper utility connections and devices used in the field installation of manufactured buildings or components can directly affect the performance of any mechanical, plumbing, or electrical subsystems which may be a part of the manufactured unit. Accordingly, such field connections and the devices to be used should be detailed in the building system and should be controlled by proper instructions and installation procedures. Items to be included in such procedures could be:

(a) Water supply; location, size, material, type of connector.

(b) Gas supply; location, size, material, type of connector.

(c) Sewer; location, size, material, type of connector.

(d) Electricity; location and type of connector; rating in volts and amperes.

(e) Air; location, size, material, and type of ducts and duct connectors.

(4) Structural Installation

The structural connections of the manufactured building or component to the site or site work should be adequately detailed in the building system. The installation control procedures should give the information necessary to verify that the structural connections were installed as detailed. The following items may be included in the procedures.

(a) Attachment of anchors and foundation plates to site-built foundations or other work.

(b) Attachment of anchors and foundation plates to the manufactured building or component.

(c) Detail, size, and material of anchors and anchor plates.

(d) Intermodule or component connection; location, size, material and type of connectors.

(e) Roof connectors; location, size, material, and type of connectors.

(5) Fire Protection Provisions

The building system should include details of all field installed fire protection provisions required for the fire related type of construction and other classifications given in the application for approval of the building system and in the building system approval reports (CES Documents No. S-01 and A-03). The installation control procedures should permit the verification that such field provisions have in fact been installed, including such items as:

(a) Fire stopping, both between certified manufactured units and between them and any field construction.

(b) Field applied fire protection of columns, beams, and other structural elements or of partitions and walls to achieve the required fire rating.

(c) Connection of unit to fire alarm systems, sprinklers, and stand pipes, including location, type of connection and connection devices.

(6) Testing

The installation control procedures should include on-site testing procedures for use by those responsible for the installation, inspection, and testing of field installed manufactured buildings or components, including:

(a) Mechanical tests - Furnace operation, including gas supply; flues and combustion air; system balance, including supply and return air volumes; thermostat operation; air conditioning system.

(b) Plumbing tests - Water pressure tests, waste and vent line tests, including hydrostatic or air tests; hot water heater operation.

(c) Electrical tests - Service; main panel, incoming service, branch circuitry, switches, outlets, and installed appliance operation.

Field Repairs

Citation. Part V, Section 2(E)(2), "Organizational provisions for field repair and disposal of rejects".

Administrative Interpretation. The compliance assurance manual should contain specific criteria to define the responsibility and liability of the manufacturer and builder/erector for making the necessary field repairs and rework to bring any deficient on-site installed units into compliance. The procedures for handling field noncompliances affecting the regulatory aspects of the construction should be covered including the reporting to the manufacturer and the Inspection Agency of any noncompliances attributable to improper or inadequate plant inspection.

The compliance assurance manual should also state the procedure to be used for withdrawing labels from units found not in compliance with regulatory requirements in the field. This procedure should also indicate how backtracking of "suspect" units in the field or in the plant which could have a similar noncompliant condition is to be accomplished.

Comment. It is essential that field repairs be consistant with in-plant construction control and that the effectiveness of the compliance assurance program be assessed by a measure of building site noncompliance history. A unit found not in compliance in the field should be investigated and identified either as a single incident peculiar to that unit or as a possible noncompliant condition common to a number of similar units.

Permission for Inspection

Citation. Part V, Section 2(F), "The manufacturer should provide the Administrative Agency with written permission, signed and notarized, for the Administrative Agency to inspect his manufacturing facilities, his products, and building sites under his control at any reasonable time without prior announcement".

Administrative Interpretation. The manufacturer should provide written permission, signed and notarized, for such inspections by the Administrative Agency as part of the compliance assurance manual submittal.

Comment. Any special conditions relevant to granting such permission for inspection should be indicated in writing. These conditions could include any proprietary or restricted plant areas, safeguards to be employed for inspecting hazardous operations or any limitations or additional permissions required for the inspection of any subcontractor activities.

d. Modification of Approved Systems and Variation of Certified Units

In Part IV, Section 2(A)(7) it is stated that no building system, or amendment thereto which has been approved, shall be modified in any way without prior authorization by the Administrative or Evaluation Agency. In Section 3(D) it is stated that certified and labeled units shall not be varied prior to the issuance of a certificate of occupancy without the approval of the Agency. The former of these requirements relates to changes or alterations in the building system prior to the fabrication of units, the latter applies to physical changes or alterations of finished, constructed, and certified manufactured buildings and components. Similarly, approval must also be sought for any changes in an approved compliance assurance manual as discussed in CES Document No. S-09.

All applications for approval either of modifications of an approved building system or compliance assurance manual, or of a variation of certified units should be submitted on the appropriate forms and should include all drawings, specifications, or other building system items necessary to clearly and fully show, and identify, any and all proposed modifications or variations.

The method of approval for modifications of approved building systems depends on whether the modification is classified as major or minor. If it is a major change, a complete new application should be submitted; if it is a minor change, an application for modification of approved building system should be submitted. A dimensional change which does not change the system or configuration and which could be incorporated in the originally submitted plans by the Administrative Agency is an example of what constitutes a minor revision. The original records, approval report, etc., would also be amended by the Administrative Agency. This is more economical than keeping several sets of records for similar systems with only minor differences between them.

Modifications of a floor plan or of a construction system, including electrical, mechanical, or plumbing systems constitute a major revision and would be treated as a new submission. It would be required to be resubmitted and to pass through the entire process of evaluation and approval.

Since both complete resubmittals and submittals for minor modifications are time consuming and costly to the manufacturer as well as to the Administrative Agency, the manufacturer should be provided with the flexibility of submitting drawings depicting elements of construction on a system basis, under one plan approval application, e.g. depict variations in floor plans that provide the manufacturer a substantial amount of flexibility. The flexibility can be provided by the manufacturer through the use of drawings that make extensive use of dimensions and sizes expressed as variables, with tables and schedules containing values for these variables for different configurations or conditions.

CES Document No. S-10, Application for Approval of Minor Modification to an Approved Building System and/or Compliance Assurance Program was developed as an

example of a form on which to make application for modification approval. In Part IV, Section 2(A)(7) it is required that approval for modifications needs to be confirmed in writing. Accordingly, the document was designed so that a properly signed and stamped copy of the application form could be used for such written approval.

CES Document No. S-11, Application for Approval of Variation to a Certified Manufactured Building or Component, was developed as an example of a form on which to make application for a variation approval. Similar to modifications, approval of variations can be confirmed by returning to the applicant a signed and stamped copy of the application form.

STATE OF _____

[*Name and Address of Administrative Agency*]

APPLICATION FOR APPROVAL OF MINOR MODIFICATION TO AN APPROVED BUILDING SYSTEM AND/OR COMPLIANCE ASSURANCE PROGRAM

☐ Modification of Building System ☐ Modification of Compliance Assurance Program

Application is hereby submitted for approval of modification(s) detailed below to the building system and/or compliance assurance program. Unless otherwise stated the modifications shall be subject to the same conditions, agreements, limitations and statements contained in the original application for approval and in the building system approval report.

GENERAL INFORMATION

Name of Manufacturer _____

Previous Application No. _____ Previous Approval No. _____

Effectiveness (Label Number(s) or Date(s)) _____

Oral Authorization Obtained ☐ Yes ☐ No Date _____

Documents Submitted (Specify) _____

DESCRIPTION OF PROPOSED MODIFICATIONS(S) _____

Name of Inspection Agency _____

(Name of Applicant)	(Title)	(Signature)	(Date)
(Name of Architect/Engineer (if required)		(Signature)	(Date)

AGENCY USE ONLY Fee Required _____

☐ Modifications Approved ☐ Modifications Disapproved

Remarks _____

Changes to the Building System Approval Report _____

(Name of Evaluator)	(Title)	(Signature)	(Date)
(Name of Agency Official)	(Title)	(Signature)	(Date)

STATE OF _____

[*Name and Address of Administrative Agency*]

APPLICATION FOR APPROVAL OF VARIATION TO A CERTIFIED MANUFACTURED BUILDING OR COMPONENT

Application is hereby submitted for approval of variation(s) to a certified manufactured building or component. Unless otherwise stated the variations shall be subject to the same conditions, agreements, limitations and statements contained in the original application for approval and the building system approval report.

GENERAL INFORMATION

Name of Manufacturer _____

Name of Builder or Owner _____

Previous Application No. _____ Previous Approval No. _____

Label Serial Number(s) _____

Unit Serial Number _____

Location of Unit _____

Documents Submitted (Specify) _____

_____

DESCRIPTION OF PROPOSED VARIATION(S)

_____

_____

_____

_____

_____

_____

_____

(Name of Applicant)	(Title)	(Signature)	(Date)
(Name of Architect/Engineer (if required)		(Signature)	(Date)

AGENCY USE ONLY Fee Required _____

☐ Variation(s) Approved ☐ Variation(s) Disapproved

Remarks _____

_____

_____

_____

_____

(Name of Evaluator)	(Title)	(Signature)	(Date)
(Name of Agency Official)	(Title)	(Signature)	(Date)

5.3. Preliminary Review

The purpose of the preliminary review is to determine that the application for building system or compliance assurance manual approval is suitable for evaluation [Part IV, Section 2(A)(2) and (B)(2)]. It is not the intent of the preliminary review to determine all the details of code compliance of the system or program. A properly performed and relatively detailed preliminary review will prevent unsuitable applications which include obvious violations from entering the evaluation process and will thus improve the efficiency of the agency or agencies responsible for the regulatory activity.

The following documents are suggested to aid in the preliminary review process:

CES Document No. E-01 Processing Record
CES Document No. E-02 Preliminary Review Checklist
CES Document No. E-03 Submittal Unsuitable for Processing

CES Document No. E-01, Processing Record, was prepared to aid the Evaluation Agency in the administrative record-keeping associated with the evaluation and approval (or disapproval) process. The Processing Record is intended to also serve as a routing slip to travel through the entire process with the submission documents. Filed after completion of the approval process, it constitutes, together with the application form and the filled out review and evaluation checklists, a complete and comprehensive record of the evaluation activity associated with the particular application, including the computation of evaluation fees based on time (man-hours) and other (travel, etc.) costs.

CES Document No. E-02, Preliminary Review Checklist, contains all those items which should be considered in determining whether a submission is suitable for evaluation or not. It is recognized that not all items indicated on the checklist may be needed for proper evaluation in every single application (particularly in the case of building components). However, it is believed that such unnecessary items will be self-evident and can be noted as "not applicable" (N.A.) in the remarks column.

CES Document No. E-03, Submittal Unsuitable for Processing, is used for notifying the manufacturer that a preliminary review has indicated that his submission is unsuitable for processing. In addition to the notice, the submitted documents are returned, together with an indication of the reasons for such action [Part IV, Section 2(A)(2) and (B)(2)]. Although the Rules and Regulations require this formal response, the Administrative or Evaluation Agency to whom the application is made should recognize that the return of the submission documents to the manufacturer, and their possible resubmittal, is costly and time consuming, both to the agency and the manufacturer. Accordingly, it is suggested that where the "Unsuitability for Processing" is due to a minor omission the manufacturer be given an opportunity to provide the necessary additional information or to make such correction necessary to provide a submission suitable for processing before a formal notice of unsuitability is issued.

STATE OF _____

[*Name and Address of Administrative Agency*]

PROCESSING RECORD

Name of Manufacturer _____

Address _____

Type of Application: ☐ New System or Program ☐ Major Modification

☐ Building System: Appl. No._____ Date____ ☐ C.A.Program: Appl. No._____ Date_____

DESCRIPTION:

A. Occupancy: ☐ One and Two Family Detached ☐ Other (Specify)_____

B. Type of System: ☐ Unitized Modular ☐ Core Unit ☐ Component

☐ Architectural ☐ Structural ☐ Mechanical ☐ Plumbing ☐ Electrical

☐ Other (Specify) _____

ACTIONS	Building System			C.A. Program			REMARKS
	Date	Hrs	Initials	Date	Hrs	Initials	
Application Received							
Forwarded for Preliminary Review							
Preliminary Review Disapproved							
Notice of Unsuitability Sent							
Preliminary Review Approved							
Forwarded for Evaluation							
Evaluation Completed							
1. Architectural							
2. Structural							
3. Mechanical							
4. Plumbing							
5. Electrical							
6. Manufacturing Facility							
Completed Eval. Notice Sent							
Approval Report (B.S.) Completed							
Other Actions:							

FEE COMPUTATIONS AND RECORD	Man-Hrs	Rate	Total	Deposit Recd	Date	Fee Due	Overpayment
Building System Evaluation							
C.A. Program Evaluation							
Other							

Fee Received $_____ Date_____ Overpayment Returned $_____ Date_____

Building System Approval Report No._____ Date_____ Date Sent _____

C.A. Program Approval No. _____ Date_____ Date Sent _____

PRELIMINARY REVIEW CHECKLIST

PAGE ___ OF ___

INSPECTION AGENCY: _____ STATE: _____

MANUFACTURER: MODEL : APPLICATION NO:

SUBJECT	DESCRIPTION	SUITABLE FOR PROCESSING		REMARKS
		YES	NO	
A. GENERAL REQUIREMENTS				
Application Form	(a) form submitted; (b) completely filled out; (c) signed as required			
Deposit and Fees	Deposit and/or fees submitted.			
Drawings	(a) correct number of copies; (b) index of drawings; (c) drawing number and number of sheets in set; (d) identification of content of each drawing; (e) date of drawing; (f) space for revisions (with date); (g) numerical and graphic scale on all drawings; (h) space for approval stamp; (i) complete plans for architectural, structural, electrical, plumbing, and mechanical (refrigeration, heating, and ventilating); (j) conformance of plans with specifications and calculations; (k) signature of licensed engineer and/or registered architect, as required; (l) building use or occupancy intended; (m) certification statement, e.g., "building designed in accordance with _____ building code."			
Supporting Data	(a) correct number of copies; (b) index; (c) identification of all data; (d) identification of manufacturer; (e) identification of architect, engineer, and/or testing laboratory; (f) all signatures as required; (g) space for approval stamp.			
Scope	Application meets scope as manufactured building or manufactured building component as defined by the applicable laws, rules, and regulations.			

PRELIMINARY REVIEW CHECKLIST (CONTINUED)

PAGE ___ OF ___

SUBJECT	DESCRIPTION	SUITABLE FOR PROCESSING		REMARKS
		YES	NO	
B. BUILDING SYSTEMS REQUIREMENTS				
Architectural	(a) floor plans; (b) sections; (c) elevations; (d) roof plans; (e) wall and partition details; (f) flashing details; (g) window and door details; (h) eave and soffit details; (i) identification of all exterior and interior materials and finishes and required flame spread rating; (j) location and details of fire separation provisions (if required); (k) identification of all members and their dimensions; (l) fire resistance rating of various parts of buildings.			
Structural	(a) framing plans for roofs, floors and walls; (b) design live loads for floors, roofs and walls; (c) details of connections; (d) vertical and lateral load calculations; (e) specifications and schedules for all structural materials and components.			
Mechanical	(a) location of all equipment, appliances and installations; (b) appliances, units, or equipment listed or labeled by an approved listing agency; (c) manufacturer's name, make, model number, input and output ratings of all appliances and equipment; (d) heat loss calculations; (e) duct and register locations, sizes, and materials; (f) details of ducts, flues, vents, and chimneys; (g) fire damper details; (h) methods of testing; (i) attachment and method of anchoring for all appliances, equipment, ducts, etc.			
Plumbing	(a) plan and rises diagrams; (b) specifications for all materials and for fixed appliances and equipment; (c) make and model for safety controls and their location (if not approved as part of equipment); (d) support of piping and interval of support; (e) vent and trap sizes; (f) grade and slope of piping; (g) method of testing.			

PRELIMINARY REVIEW CHECKLIST (CONTINUED)

SUBJECT	DESCRIPTION	SUITABLE FOR PROCESSING		REMARKS
		YES	NO	
Electrical	(a) plan and detail of service equipment, service entrance conductors, and raceways; (b) single line diagram of the entire electrical installation; (c) load calculations for service, feeders, and panel layouts; (d) sizes of all feeders and branch circuits; (e) size, rating, and location of main disconnect/ overcurrent protective devices; (f) location of all outlet and junction boxes; (g) method of attachment, mounting, and support of wiring and fixtures; (h) listing and labeling of all wiring, fixtures, and equipment; (i) method of testing.			
Transportation and Suite Installation	(a) transportation and handling requirements; (b) site preparation, including foundation requirements; (c) details for and method of field connection of units, modules, or components to each other and to foundations; (d) method of interconnecting mechanical, plumbing, and electrical services between units, modules, or components and to on-site service lines; (e) method of testing for all on-site connections.			
C. COMPLIANCE ASSURANCE MANUAL				
General Requirements	(a) correct number of copies; (b) Inspection Agency approval of manual; (c) index to manual; (d) space for approval stamp; (e) contractual agreement between manufacturer and Inspection Agency.			
Organization Requirements	(a) procedure for revision of compliance assurance manual; (b) organizational structure chart; (c) training and qualifications of compliance personnel; (d) checklists for a uniform system of audits; (e) procedure for maintenance of compliance records; (f) procedure for control of changes; (g) procedure for control of working drawings; (h) description of serial numbering system; (i) procedure for control of labels.			

PRELIMINARY REVIEW CHECKLIST (CONTINUED)

SUBJECT	DESCRIPTION	SUITABLE FOR PROCESSING		REMARKS
		YES	NO	
Materials Control	(a) procedure for control of procurement; (b) receiving inspection checklists; (c) instructions for protection of materials; (d) procedure for disposition of rejected materials.			
Production Control	(a) procedure for corrective action; (b) procedure for control of testing and inspection equipment; (c) description of frequency of inspection; (d) provision for authority for compliance assurance; (e) production flow diagrams of plant; (f) in-plant inspection checklists for each station; (g) code compliance workmanship standards; (h) procedure for disposition of noncompliant construction.			
Finished Product Control	(a) procedure for final inspection and certification; (b) procedure for handling and storage; (c) provisions for packing, packaging and shipping controls; (d) procedure for transportation controls.			
Installation Control	(a) procedure for installation control; (b) procedure for handling field repairs.			
Permission for Inspection	(a) signed and notarized statement granting Administrative Agency permission for inspection.			

STATE OF _____

[*Name and Address of Administrative Agency*]

[*Name of Manufacturer*]
[*Address*]

Date _____

RE: SUBMITTAL UNSUITABLE FOR PROCESSING

Dear Sir:

Our preliminary review of your submission of the following application(s) for the approval of

☐ Building System - Application No. _____

☐ C.A. Program - Application No. _____

indicates that your submittals are unsuitable for processing due to following reasons:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Attachments:

☐ Preliminary Review Checklist

☐ Documents Returned ☐ plans ☐ specs ☐ calculations ☐ test data ☐ C.A. Manual

☐ other _____

Sincerely,

_____
Signature of Agency Official

_____
Name and Title

5.4. Evaluation

Evaluation as used herein is the process of reviewing the submitted building system and/or compliance assurance program documentation to determine the compliance of the system and program with all codes and other applicable requirements. Therefore, the evaluation is the central activity in the approval process; that is, no matter how well the rest of the manufactured building regulatory program is administered, how well the preliminary review is conducted, or how well the approval documents are prepared, such approval is meaningful only if the evaluation is conducted effectively. The efficiency of the program administration and the completeness and clarity of the submission documents both affect the evaluation effectiveness.

The most important factor in determining the effectiveness of the evaluation program is the quality of the individual evaluator, both with regard to his technical competency and his reliability. It is not within the scope of Project CES to discuss either of these two factors, except to emphasize that the technical competency referred to is not the same as that required primarily by a designing engineer or architect for whom the creative application of technical knowledge is of utmost importance. The required competency of the evaluator includes a thorough understanding of the codes and the meaning and intent of the various code provisions. A detailed analysis of qualification requirements for evaluating personnel is being conducted by NBS Project LEAP.

Although the personnel qualifications must be considered as the single most important element in the effectiveness of the evaluation process, for a given level of personnel qualifications this effectiveness also depends on the aids provided to the evaluators, such as checklists, instructions, reference books, and forms. Such aids can significantly improve the efficiency of the operation, giving the evaluator more time for the study of the critical or unusual provisions of a building system or compliance assurance manual, thus reducing the cost of the regulatory program. In addition, the aids used in a specific program are important to any person who has the responsibility of evaluating the effectiveness of such a program, particularly when one state is considering the granting of reciprocity to another state. The quality of the aids used in the evaluation process of a particular state program directly affects the credibility that can be placed in the program, and if several states use the same, or similar aids, a good basis exists for the mutual acceptance of approved and certified manufactured buildings or components. Accordingly, superior aids, or evaluation documents, not only serve to improve the evaluation function, but also directly affect and improve the reciprocity among the states, thus serving the industry by allowing marketing areas which are regional or national in scale rather than restricted to the territory of a single state.

In addition to the above broad significance, these evaluation documents can be of importance in the transmittal of the reasons for disapproval of an application. A copy of the filled out evaluation checklists can serve this purpose.

a. Building System

It is required that the Administrative or Evaluation Agency determine whether a submitted building system meets the codes, standards, and specifications adopted by the state, and conforms to the requirements of the Act and the Rules and Regulations. The determination that the building system meets the requirements of the Act and the Rules and Regulations is considered during the preliminary review. This section on Evaluation discusses the determination of compliance with the applicable building, mechanical, plumbing, and electrical codes.

As an aid to the evaluator, various model code groups have developed checklists based on their codes. For states having adopted one of these model codes, such lists could be used in the evaluation of building systems. In the interest of reciprocity, however, it would be desirable for the states to use uniform lists independent of the codes used. Accordingly, Project CES has developed lists giving the code requirements in general terms. These lists are applicable to any one or all of the following codes:

Uniform Building Code, ICBO
Uniform Mechanical Code, ICBO, IAPMO
Uniform Plumbing Code, IAPMO
Basic Building Code, BOCA
Basic Plumbing Code, BOCA
Basic Mechanical Code, BOCA
Southern Standard Building Code, SBCC
Southern Standard Mechanical Code, SBCC
Southern Standard Plumbing Code, SBCC
Southern Standard Gas Code, SBCC
National Electrical Code, NFPA No. 70
One and Two Family Dwelling Code, BOCA, Am. Ins. Assn, SBCC, ICBO

In addition to checklists, the various code groups have developed manuals and similar publications useful to the evaluator. The following books and manuals are a few examples of publications which provide the evaluator and inspector with useful background information:

"Plan Review Manual" [11]
This manual (1971) was developed as an aid to those engaged in the review of plans for code compliance. It is divided into two sections: (a) structural, (b) non-structural. The Uniform Building Code (Vol. I-1970) has been used as reference throughout the text. However, the principles discussed could be extrapolated and applied to users of any of the model codes.

"Uniform Plumbing Code Interpretations Manual" [12]
This book includes two sections: (1) an interpretations manual; and (2) an inspectors' manual. Part I is especially useful to the evaluator utilizing the Uniform Plumbing Code (UPC), as there

are many UPC Code requirements that can be met in different ways and still comply. The manual would aid the evaluator in accepting alternatives if submitted by the manufacturer for approval. The inspectors' manual is designed to aid in uniform application of plumbing code provisions and procedures. It is composed of selected items from IAPMO's in-service training files, pertinent to Uniform Plumbing Code administration, which have found practical acceptance in local use.

"A Training Manual in Field Inspection of Buildings and Structures" [13]
This is a useful book for the inspector who wants to achieve skill in inspection techniques. It also serves as a teaching syllabus for inspector training courses.

"NFPA Handbook of the National Electrical Code" [14]
Based on the National Electrical Code, this book is a useful aid to the evaluator as well as the designer. It includes comments, diagrams and illustrations which facilitate understanding of the code rules.

"Electrical Code Diagrams" [15]
These are useful books in understanding the National Electrical Code, and the diagrams should be helpful to the designer, evaluator and the electrical inspector.

"Practical Electrical Wiring" [16]
Based on the National Electrical Code, this is a very useful book for the electrical inspector who wants to learn the trade as well as for the inspector already engaged in electrical inspection. The scope of the book has been limited to wiring of structures of limited size and at ordinary voltages, under 600 volts.

(1) Use of CES Evaluation Checklists. The checklists CES Documents No. E-04 to E-08 can be used for the following purposes: (a) to assure that the evaluator considers all relevant code related items; (b) to provide a permanent record of the evaluation; (c) to serve as a means of transmitting a list of deficiencies to the manufacturer in conjunction with a "Notice of Completed Evaluation", CES Document No. A-01; and (d) as a basis from which a more detailed checklist can be developed if the Administrative Agency considers such a detailed checklist is necessary.

(2) Content and Format of CES Evaluation Checklists. The content of the checklists is based on the general requirements for evaluation of the code related items for detached one and two family dwellings, as given in the major model codes. The lists do not contain specific requirements such as numerical values or material specifications. The checklists do give the appropriate chapter and section numbers of the "One and Two Family Dwelling Code" ("One and Two Family Electrical Code" in CES Document No. E-08). Space is provided for inserting the appropriate section

numbers of the code in effect in a specific jurisdiction. In addition, space is provided on the checklists for recording compliance or noncompliance as appropriate, and for remarks for identifying any specific deficiency.

The One and Two Family Dwelling Code is based on the model codes, setting forth minimum requirements for detached one and two family dwellings not more than three stories in height, and covers all important items of the other codes. The One and Two Family Electrical Code (NFPA No. 70A-1972) is based on the National Electrical Code (NFPA No. 70). Only those wiring methods and materials most commonly encountered in the construction of new one and two family dwellings are included in this electrical code (NFPA No. 70A), and only current ratings up to and including 225 amperes and voltages up to and including 600 volts are included in this code.

(3) Document Identification. The evaluation checklists are divided into the following documents:

CES Document No. E-04	Architectural
CES Document No. E-05	Structural
CES Document No. E-06	Mechanical
CES Document No. E-07	Plumbing
CES Document No. E-08	Electrical

Since the code provisions do not clearly distinguish between structural features on the one hand, and architectural, fire, and health and safety on the other hand, the classification of items into CES Documents No. E-04 and E-05 is in some instances rather arbitrary. Accordingly, the two checklists should be used together and not used independently from each other.

(4) Certification and Testing of Building Products. Various code provisions require that building elements, equipment, and equipment parts be "certified" or be tested. Accordingly, the evaluator may be called upon to determine whether a particular "certification" or label meets the requirements of such code provisions, and whether a particular test performed reliably demonstrates the performance of a product. As an aid in this determination, CES Document No. E-09 discusses both certification procedures and test reports.

EVALUATION CHECKLIST — ARCHITECTURAL

PAGE ___ OF ___

STATE: _____

MANUFACTURER: MODEL: APPLICATION NO:

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE YES	COMPLIANCE NO	REMARKS
Ch. 2	BUILDING PLANNING				
R-204	Light and Ventilation	(a) glazing area; (b) area of openable glazing; (c) mechanical ventilation; (d) bathroom glazing.			
R-205	Room Sizes	Floor areas - Horizontal Dimensions: (a) largest habitable room; (b) smallest habitable room; (c) kitchen.			
R-206	Ceiling Height	(a) average ceiling height; (b) minimum ceiling height; (c) projections (beams-girders).			
R-207	Sanitation	(a) water closet; (b) lavatory; (c) bathtub or shower; (d) kitchen area; (e) kitchen sink; (f) hot and cold running water; (g) connection to sewer/disposal.			
R-208	Toilet, Bath, Shower Compartments	(a) privacy of occupant; (b) compartment size and clearances; (c) floor and wall finishes; (d) bathtub/shower enclosures, panels, doors; (e) glazing.			
R-209	Glazing	Minimum thickness and type of glass.			
R-210	Private Garages	Requirements between garage and residence - (a) openings; (b) doors; (c) separations; (d) floor surface.			
R-211	Exits	(a) number of exits; (b) openable window in sleeping room; (c) sill height; (d) free openable area; (e) minimum dimension.			
R-212	Doors and Hallways	(a) exit doors; (b) width; (c) height; (d) hallways; (e) minimum width.			

EVALUATION CHECKLIST — ARCHITECTURAL (CONTINUED)

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE		REMARKS
			YES	NO	
R-213	Landing	(a) width and depth; (b) door swing; (c) threshold.			
R-214	Stair-ways	(a) clear width; (b) headroom; (c) rise, run; (d) handrail and projection clearance; (e) spiral stairways; (f) tread widths; (g) fire stopping; (h) bearing studs; (i) stairway width.			
R-215	Hand-rails and Guard-rails	(a) heights of handrails; (b) guardrails for porches, balconies, etc.; (c) intermediate rails.			
Ch. 3	FOUNDATIONS				
R-303	Footings	(a) foundation wall height above grade; (b) stepped foundations.			
R-304	Basement Walls	(a) minimum thickness; (b) allowable depth; (c) backfill.			
R-305	Water-proofing	(a) foundation drains below grade; (b) gravity or mechanical system; (c) drain tile.			
R-306	Damp-proofing	(a) cement parging; (b) bituminous coatings; (c) membrane protections; (d) habitable rooms below grade.			
R-308	Decay and Termite Protec-tion	(a) pressure treated lumber; (b) approved preservatives; (c) decay-resistant lumber; (d) lumber in areas subject to decay and termites; (e) embedded lumber; (f) clearances from ground level.			
R-309	Under-floor Space	(a) area and location of ventilating openings; (b) screening; (c) vapor barrier; (d) access crawl space opening and access door.			

EVALUATION CHECKLIST — ARCHITECTURAL (CONTINUED)

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE YES	COMPLIANCE NO	REMARKS
Ch. 4	WALL CONSTRUCTION				
R-402	Wood	(a) grade of lumber; (b) construction method; (c) fastening method; (d) exterior wall; (e) interior load bearing partitions; (f) cutting and notching; (g) spacing of studs and joists; (h) headers; (i) firestopping.			
Ch. 5	WALL COVERING				
R-501	General	(a) wall covering materials; (b) finishes.			
R-502	Interior Covering	(a) installation; (b) vertical assemblies; (c) lath; (d) plaster; (e) gypsum wallboard; (f) shower and bath compartments; (g) other finishes.			
R-503	Exterior Covering	(a) installation; (b) lath; (c) plaster; (d) masonry veneer; (e) weather protection; (f) weather-resistant siding; (g) weather-resistant membrane; (h) flashing; (i) plywood; (j) covering attachment.			
Ch. 6	FLOORS				
R-602	Wood	(a) identification; (b) grade; (c) allowable spans/joist spacing; (d) bearing; (e) lateral support; (f) notching; (g) sheathing.			
R-603	Concrete	(a) contraction joints; (b) site preparation/ sand/gravel sub-course; (c) vapor barrier.			
Ch. 7	ROOF-CEILING CONSTRUCTION				
R-701	General	Construction method.			
R-702	Wood	(a) identification; (b) grade; (c) allowable span/spacing; (d) sheathing; (e) framing details; (f) pitch.			

EVALUATION CHECKLIST — ARCHITECTURAL (CONTINUED)

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE		REMARKS
			YES	NO	
R-704	Ceiling Finishes	(a) installation; (b) furring; (c) lath; (d) plaster; (e) gypsum wall board; (f) other finishes and coverings.			
R-705	Ventilation	(a) ventilating openings; (b) eave or cornice vents; (c) opening protection.			
R-706	Attic Access	(a) attic clear height; (b) access opening dimension.			
Ch. 8	ROOF COVERINGS				
R-801	General	(a) material; (b) tests and standards; (c) class.			
R-802	Base Sheet Application	(a) roof surface; (b) cementing method; (c) anchoring method; (d) manufacturer's specifications; (e) finish roofing material and fastening procedure.			
R-803	Composition Asphalt Organic Felt Shingles	(a) shingle application; (b) slope factor; (c) underlayment; (d) fasteners and penetration; (e) roof valley flashing (corrosion-resistant metal); (f) lap and extension dimensions of flashing.			
R-804	Slate Shingles	(a) application method; (b) corrosion-resistant nails, wire, flashing; (c) underlayment material and application; (d) flashing: gauge, material; (e) splash diverter; (f) laps and extensions.			
R-805	Asbestos Cement Shingles	(a) method of application; (b) underlayment; (c) slope or pitch of roof; (d) thickness of roofing material; (e) corrugated asbestos; (f) resistant nails and flashing material; (g) roof valley flashing.			
R-806	Metal Roofing	(a) flat sheets, shingles, corrugated; (b) solid sheathed roof; (c) application method; (d) slope; (e) underlayment.			

EVALUATION CHECKLIST — ARCHITECTURAL (CONTINUED)

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE		REMARKS
			YES	NO	
R-807	Tile, Clay, Concrete Shingles	(a) fastening method; (b) slope; (c) tile projection; (d) treated wood stripping size; (e) underlayment; (f) nailing and valley flashing materials.			
R-808	Built-up Roofing	(a) composition and slope; (b) base surface; (c) base layer installation; (d) successive layer installation; (e) surfacing; (f) cap sheets; (g) application temperature of asphalt and pitch.			
R-809	Wood Shingles	(a) type of sheathing; (b) sidelap and nailing; (c) slope and/or underlayment; (d) valley flashing; (e) weather exposure/hip and ridge.			
R-810	Wood Shakes	(a) type of sheathing/spacing; (b) course, side lap, spacing; (c) fastening, size of shakes; (d) laying method; (e) slope/underlayment; (f) roof valley flashing; (g) weather exposure/ hip and ridge.			
Ch. 9	CHIMNEYS AND FIREPLACES				
R-901	General	(a) materials; (b) tests; (c) standards.			
R-902	Support	Construction.			
R-903	Addi-tional Load	Supports own/additional load.			
R-904	Termina-tion	(a) extended above the highest roof point; (b) highest point of building.			
R-905	Wall Thick-ness	(a) material; (b) minimum wall thickness.			
R-906	Flue Lining (mate-rial)	(a) clay materials; (b) thickness; (c) other liner material.			

EVALUATION CHECKLIST — ARCHITECTURAL (CONTINUED)

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE		REMARKS
			YES	NO	
R-907	Flue Lining (Installation)	(a) location; (b) installation method.			
R-908	Multiple Flues	(a) masonry wythes; (b) wythe separation, thickness, bonding method; (c) staggered joints in linings.			
R-909	Flue Area (Appliances)	(a) chimney flue area; (b) appliance connections area.			
R-910	Flue Area (Fireplace)	Flue areas (openings): (a) round lined; (b) square or rectangle lined; (c) unlined openings; (d) firebrick lined; (e) opening areas.			
R-911	Inlet	(a) entry side; (b) connector control; (c) inlet materials (fire clay, refractory, metal).			
R-912	Cleanout Opening	(a) cleanout provisions; (b) ferrous metal doors and frames; (c) locking devices; (d) location (clearance between lowest inlet).			
R-913	Chimney Clearance	(a) clearance of adjacent combustible materials; (b) chimney inside, outside, or partially within dwelling.			
R-914	Chimney Fire Stopping	(a) material; (b) depth.			

EVALUATION CHECKLIST — ARCHITECTURAL (CONTINUED)

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE		REMARKS
			YES	NO	
R-915	Factory-built Chimneys	Approved type.			
R-916	Fireplace Walls	(a) construction materials (masonry, reinforced concrete, stone, fire brick); (b) lining and material thicknesses; (c) critical dimensions.			
R-917	Steel Fireplace Units	(a) steel fireplace; (b) firebox liner thickness; (c) air chamber; (d) installation clearances, total wall thickness; (e) air duct material.			
R-918	Lintel	(a) masonry supporting member over fireplace, material.			
R-919	Hearth Extension Material	(a) materials (brick, concrete, stone, tile); (b) other approved material; (c) reinforcing; (d) removal of combustible construction materials.			
R-920	Hearth Extension	(a) dimension; (b) clearances.			
R-921	Fireplace Clearance	Clearance from combustible framing material.			
R-922	Fireplace Firestopping	Stopping between fireplace masonry and combustible framing.			
R-923	Combustible Materials	Clearance from fireplace opening.			

EVALUATION CHECKLIST — ARCHITECTURAL (CONTINUED)

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE		REMARKS
			YES	NO	
R-924	Factory-built Fire-places	(a) fire chamber assembly; (b) chimney sections; (c) roof assembly, parts and accessories; (d) laboratory approved; (e) clearances to combustible materials; (f) chimney extensions through floors, ceilings, roof; (g) fire stops; (h) enclosure of extended portions; (i) hearth extension.			
R-925	Factory-built Fire-place Stoves	(a) laboratory approval; (b) clearance from combustible material; (c) protection of combustible floor, material, extend.			

EVALUATION CHECKLIST — STRUCTURAL

STATE: _____

MANUFACTURER: MODEL: APPLICATION NO:

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE		REMARKS
			YES	NO	
Ch. 2	BUILDING PLANNING				
R-202	Design Criteria	(a) roof live load; (b) floor live load; (c) wind load; (d) seismic zone; (e) frost line depth; (f) allowance for partitions; (g) concentrated loads.			
Ch. 3	FOUNDATIONS				
R-302	Materials	(a) lumber (timber); (b) concrete; (c) steel; (d) masonry; (e) others.			
R-303	Footings	(a) design soil bearing pressure; (b) design calculations; (c) depth of footings; (d) construction details; (e) recommended loading schedule.			
R-304	Basement Walls	(a) type of backfill; (b) minimum thickness; (c) maximum depth of unbalanced fill; (d) design calculations; (e) recommended loading schedule.			
R-307	Foundation Studs	(a) recommendations provided; (b) size, length, and spacing; (c) bracing; (d) protection of bases.			
Ch. 4	WALL CONSTRUCTION				
R-402	Wood	(a) identification; (b) grade; (c) bracing; (d) bearing and shear wall framing; (e) connection details; (f) cutting and notching; (g) header schedule.			

EVALUATION CHECKLIST — STRUCTURAL (CONTINUED)

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE		REMARKS
			YES	NO	
R-403	Metal	(a) materials: structural steel shapes and bars; aluminum structural elements; (b) allowable spans; (c) framing; (d) connections.			
R-404	General Masonry Construction	(a) materials: masonry units, mortar, grout, reinforcing steel; (b) corbel details; (c) combination of materials; (d) piers; (e) chases and recesses; (f) stack bond; (g) unsupported heights and lengths; (h) lintels; (i) anchorage at floors and roofs; (j) steel reinforcement - area and spacing; (k) beam and girder bearing.			
R-405	Hollow Unit Masonry	(a) mortar bedding; (b) bonding - masonry units or metal ties.			
R-406	Solid Masonry	(a) mortar bedding; (b) bonding (individual and adjacent wythes) - masonry units and metal ties.			
R-407	Cavity Wall Masonry	(a) thickness of backing and facing; (b) width of cavity; (c) metal ties - type, size and spacing.			
R-408	Grouted Masonry	(a) type of mortar and grout; (b) low-lift grouting - width of longitudinal vertical joints, height of lifts; (c) high-lift grouting - size and spacing of metal ties, provision for cleanouts, width of grout space, height of lifts.			
R-409	Reinforced Grouted Masonry	(a) grouted masonry requirements; (b) thickness of grout spaces and mortar joints.			

EVALUATION CHECKLIST — STRUCTURAL (CONTINUED)

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE		REMARKS
			YES	NO	
R-410	Reinforced Hollow Unit Masonry	(a) mortar type and bedding; (b) minimum cell dimensions; (c) cleanout provisions; (d) maximum grout lifts.			
Ch. 5	WALL COVERING				
R-503	Exterior Covering	Masonry veneer: (a) maximum height where attached to wood; (b) lintel spans; (c) size and spacing of veneer ties.			
Ch. 6	FLOORS				
R-601	General	(a) materials; (b) design and construction standards.			
R-602	Wood	(a) identification; (b) grade; (c) allowable spans; (d) bearing; (e) lateral support; (f) notching.			
R-604	Metal Floors	(a) materials - steel, aluminum; (b) allowable spans for girders and beams; (c) columns.			
Ch. 7	ROOF-CEILING CONSTRUCTION				
R-701	General	(a) materials; (b) design and construction standards.			
R-702	Wood	(a) identification; (2) grade; (c) allowable spans for joists and rafters; (d) allowable spans for sheathing.			
R-703	Metal	(a) materials - steel, aluminum; (b) allowable spans for beams and girders.			

EVALUATION CHECKLIST — MECHANICAL

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STATE: _____

MANUFACTURER: MODEL: APPLICATION NO:

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE YES	COMPLIANCE NO	REMARKS
M-1102 Table 11A and 11B	Installation Clearances - Heat Producing Appliances	Clearances of appliances from combustible materials.			
M-1915 and 1916	Fuel Connections (Oil)	Installation of tank, piping and valves for oil burning appliances.			
M-1910 Table 19	Fuel Connections (Gas)	Gas appliance connectors sized for total demand of appliance load.			
M-1106	Access	Accessibility of appliance fire-box.			
M-1107	Automatic Control Devices	All heating appliances provided with listed automatic control devices.			
Ch. 12	Combustion Air	Requirements for (a) combustion air; (b) location of combustion air openings and ducts; (c) method of providing combustion air for appliances located in confined and unconfined spaces.			
Ch. 13	Warm-air Heating Systems	Warm air furnace - (a) location requirements; (b) access; (c) separation of combustion air and circulating air openings; (d) sizing of openings; (e) supply air and circulating air requirements; (f) requirements for furnaces located in underfloor spaces and roofs.			

EVALUATION CHECKLIST — MECHANICAL (CONTINUED)

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE		REMARKS
			YES	NO	
Ch. 14	Vented Appliances, Floor Furnaces and Unit Heaters	(a) Installation; (b) location; (c) access; (d) separation; and (e) combustion air requirements for vented decorative appliances, floor furnaces, vented wall furnaces, unit heaters and room heaters.			
Ch. 15	Venting of Appliances	(a) Type of venting system; (b) location and support; (c) vent termination; (d) length; (e) pitch; and (f) clearance of vents. Masonry and metal chimney requirements, chimney connector sizing and location.			
Ch. 16	Ducts	(a) Duct material and construction; (b) installation; (c) ventilating ceilings; (d) underfloor space as supply plenum; (e) duct insulation; (f) fire dampers; and (g) automatic shut-off.			
Ch. 17	Comfort Cooling Systems	Comfort cooling system requirements - (a) installation; (b) access; (c) supply and return air; and (d) limitations.			
Ch. 18	Absorption Units and Systems	Absorption units and system requirements - (a) location; (b) access; (c) installation; and (d) clearances.			
---	Evaporative Cooling Systems	Evaporative cooling system requirements - (a) location; (b) access; (c) installation; and (d) clearances.			
---	Refrigerating Equipment	(a) Type of refrigerant; (b) location of refrigeration equipment; (c) fire-resistance requirements, ventilation and allowable equipment in refrigeration machinery room; (d) refrigerant piping, containers and valves; (e) erection of refrigerant piping; (f) pressure relief devices for compressors; and (g) pressure vessels.			

EVALUATION CHECKLIST — MECHANICAL (CONTINUED)

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE YES	COMPLIANCE NO	REMARKS
M-1108 to M-1111	Miscellaneous Heat-Producing Appliances	Requirements for miscellaneous heat producing appliances - (a) ranges; (b) open-type broiler units; (c) domestic clothes dryers; and (d) direct gas fired make-up heaters.			
---	Heat loss and Heat Gain Calculations	Heat loss and heat gain calculations.			

EVALUATION CHECKLIST — PLUMBING

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STATE: _____

MANUFACTURER: MODEL: APPLICATION NO:

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE		REMARKS
			YES	NO	
Ch. 21	Materials	Listing of all plumbing material (pipes, fittings, fixtures, valves, appliances and equipment).			
Ch. 20	Prohibited Fittings and Practices	Check if any fitting, fixture and piping connection, appliance, device or method of installation obstructs flow of water, wastes, sewage or air in drainage or venting systems greater than normal frictional resistance to flow; connections between dissimilar metals.			
Ch. 20	Pipe Protection	Protection of pipes - provisions for expansion, contraction and structural settlement, corrosion, erosion or mechanical damage and freezing.			
Ch. 20	Hangers and Supports	Adequacy of support of piping fixtures and equipment; spacing of supports and use of approved clamps.			
Ch. 22	Cleanouts	Requirements for cleanouts, including location and sizing.			
Ch. 23	Indirect Waste Piping	Requirements for indirect waste connections.			
--	Interceptors and Drains	Requirements for interceptors and drains.			
Ch. 21 24	Valves	Requirements for pressure regulator and relief valves, including gate valves.*			
Ch. 22	Drainage and Venting Systems	Size of vent and drainage piping according to given length, fixture units supplied and for given minimum trap sizes or sizing according to discharge capacity. (Table 22-A, 22-B)			

*Where possible to ascertain local pressure conditions.

EVALUATION CHECKLIST — PLUMBING (CONTINUED)

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE		REMARKS
			YES	NO	
Ch. 23	Fittings (Directional Change)	Appropriate use of approved fittings when changes in direction of drainage flow occur.			
Ch. 22	Wet Venting	Requirements for vertical wet venting.			
Ch. 22	Grade	Requirements for grading of horizontal piping.			
Ch. 23	Traps	Requirements for traps.			
Ch. 20	Joints and Connections	Requirements for pipe joints and connections.			
Ch. 24	Water Distribution	Requirements for (a) sizing of potable water piping; (b) backflow prevention devices; and (c) vacuum breakers.			
Ch. 19	Fuel Gas Piping	(a) Sizing of gas and liquified petroleum piping; (Table 19-C, 19-D); (b) installation; (c) gas meter locations.			
Ch. 11 19 24	Water Heaters and Vents	Gas-fired or oil-fired water heaters (a) combustion air requirements; (b) installation; (c) enclosures; (d) venting; and (e) access of working space.			

EVALUATION CHECKLIST — ELECTRICAL

STATE: _____

MANUFACTURER: MODEL: APPLICATION NO:

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE		REMARKS
			YES	NO	
Art. 210	Branch Circuits	General requirements - (a) identification of color code for branch circuits; (b) voltage to ground; (c) voltage between conductors; (d) voltage drop; (e) ground fault circuit protection (210-8). Specific requirements - (a) ampacity and size of circuit conductors; (b) over current device rating; (c) outlet devices rating; (d) installation and location (210-25) of receptacle outlets; (e) maximum load; (f) permissible load; (g) requirements of circuits having two or more outlets in accordance with Table 210-24.			
Art. 215	Feeders	Installation requirements for and size of conductors in the feeders, supplying power to branch circuits and loads as per article 220. Protection of feeders.			
Art. 220	Branch Circuit & Feeder Calculations	Expected load calculations (for expected branch circuit and feeder loads and number of branch circuits required). (Tables 220-2(b), 220-11, and 220-19.)			
Art. 230	Services	(a) size; (b) rating; (c) insulation; (d) location; (e) protection of service entrance conductors; and (f) control and protection equipment requirements.			
Art. 240	Over-current Protection	General requirements for (a) use of overcurrent protection devices, overcurrent protection of equipment, protection of conductors according to their ampacities (Tables 310-16 to 310-19); (b) location of overcurrent devices; (c) enclosure requirements; (d) conformance of plug fuses and fuse holders; (e) cartridge fuses and fuse holders; (f) circuit breakers and supplementary overcurrent protection.			

EVALUATION CHECKLIST — ELECTRICAL (CONTINUED)

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE YES	COMPLIANCE NO	REMARKS
Art. 250	Grounding	General requirements for grounding and bonding of electrical installations including grounding and bonding of all exposed metals likely to be energized in prewired panels and/or building components and specific requirements for the following: (a) systems, circuits, and equipment required, permitted or not permitted to be grounded; (b) circuit conductor to be grounded on grounded systems; (c) location of grounding connections; (d) methods of grounding and bonding; (e) conditions under which guards, isolation maybe substituted for grounding; (f) connections for lighting arrestors.			
Art. 300	Wiring	(a) common enclosure requirements for conductors of different systems; (b) protection against physical damage, corrosion, and thermal expansion; (c) requirements for continuity; (d) provision for boxes at each splice point; (e) insertion and support of conductors in raceways; (f) wiring in ducts, plenums and other air handling spaces; (g) requirements for underground installation of conduits; (h) limitations on cutting, notching, and boring of structural members for routing electrical wiring.			
Art. 310	Conductors for general wiring	Adequacy of conductors for (a) mechanical strength; (b) insulation; (c) ampacity for the particular conditions under which they are to be used. Provisions of Table 310-13 for particular conductor application and insulation conformance.			
Art. 332 334 336 338 339 340 345	Cables	Installation and construction specification requirements for sheathed, metal-clad, non-metallic and power, and control tray cables, intermediate metal conduit, etc.			

EVALUATION CHECKLIST — ELECTRICAL (CONTINUED)

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE		REMARKS
			YES	NO	
Art. 366	Electrical Floor Assemblies	General, installation and construction specification requirements for field installed wiring system using electrically conductive panels and receptacle housing units for branch circuits.			
Art. 370	Outlet, switch and junction boxes and fittings	Requirements for installation of outlet, switch and junction boxes and fittings. Maximum number of conductors in outlet and junction boxes per Table 370-6(a) and volume per conductor per Table 370-6(b).			
Art. 373	Cabinets and cut-out boxes	Requirements for installation of cabinets and cut-out boxes.			
Art. 380	Switches	Requirements for switches - (a) enclosures, (b) connection to grounded conductors, (c) wiring, (d) types, and (e) mounting requirements.			
Art. 384	Switch-boards and Panel-boards	Requirements for switchboards, panelboards and distritution boards - (a) location, (b) construction specs, (c) overcurrent protection, etc., (d) spacing between bare metal parts per Table 384-26.			
Art. 400	Flexible Cords and Cables	Requirements for flexible cords and cables - Description, size of conductors per Table 400-4; ampacity per Table 400-5.			
Art. 402	Fixture Wires	General requirements and construction specifications for fixture wires. Conformance with provisions of Table 402-3.			

EVALUATION CHECKLIST — ELECTRICAL (CONTINUED)

CODE NUMBER	SUBJECT	DESCRIPTION	COMPLIANCE		REMARKS
			YES	NO	
Art. 410	Lamps, Fixtures and Lighting Installations	Requirements for lighting fixtures, lampholders, lamps, receptacles and rosettes - provisions for (a) fixture location, (b) support, (c) wiring of fixtures, (d) conductor protection, (e) construction requirements, (f) grounding, etc.			
Art. 422	Appliances	(a) Branch circuit requirements, (b) installation, (c) grounding, (d) control and protection, (e) overcurrent protection, and (f) marking, etc. Appliances include room air conditioners, household refrigerators and freezers, drinking water coolers and beverage dispensers.			
Art. 424	Fixed Electric Space Heating Equipment	Fixed electric space heating equipment requirements. (Heating equipment may include heating cable, unit heaters, boilers, central systems, or other approved fixed electric space heating equipment. This article does not cover process heating and room air-conditioning.)			

CERTIFICATION OF PRODUCTS AND TEST REPORTS

a. Certification

Some form of certification exists today for many building products. The purpose of such certification is to assure the compliance of the product to some code or standard of safety and performance. The certification programs are either:* (1) established and administered by independent organizations such as Underwriters' Laboratories; (2) established by a trade association but administered by an independent organization such as the window certification program of the Architectural Aluminum Manufacturer's Association, administered by Electrical Testing Laboratories, Inc.; (3) both established and administered by a trade association such as the program sponsored and administered by the American Plywood Association; or (4) administered and enforced by a single manufacturer (self-certification). Some certification programs are based on a single test or evaluation of a prototype, some are based on periodic retesting or re-evaluation of the product, and some finally are based on tests and on a continuing surveillance of the manufacturing process to assure not only that the design of the product complies to a prescribed code or standard, but also that actual production units meet such code or standard.

From the above discussion it is evident that the degree of confidence that the evaluator can place in the certification of a specific product depends on the degree of independence of judgement exercised in accepting or rejecting the product. Accordingly, the certification information to be submitted to the evaluator for the determination of the product's compliance with a specific code or standard should include the following data:

1. Identification of product
2. Name of agency or organization that has established the certification program.
3. Name of agency or organization that administers the program.
4. Code or standard that forms the technical basis for the certification.
5. Type of evaluation method used (testing, analysis).
6. Number of specimens tested or evaluated.
7. Sampling techniques and identification of person conducting the sampling.
8. Frequency of follow-up tests.
9. Brief description of surveillance activity to assure uniformity of production quality.
10. Limitations, if any, of the certification.

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*Programs cited are examples of known certification processes. No preference for a particular program is intended nor is any ranking of programs implied.

Although all the above factors can influence the confidence to be placed in any particular certification program, it is recognized that some programs have been found so reliable that they are nationally recognized. In such instances Administrative Agencies do not normally require the submission of all the above information. It should also be recognized that the certification programs themselves depend largely on the characteristics of the product, particularly its complexity. Accordingly, both the evaluation of and the submission requirements for certification documents will depend on the individual product. It would serve both the Administrative Agency and the manufacturer if the agency would prepare a list of those products and certification programs for which not all the above information need to be submitted.

b. Test Reports

Tests on products, as used in this context, mean the testing of an individual product independent of any certification program. The purpose of such tests is the demonstration of the performance capabilities of a product related to specific or implied code or standards requirements. If the method of test is not given in the code or standard,the evaluation of the test report submission will have to include a determination of whether or not the test conditions simulate accurately the conditions to which the product will be subjected in service. Only after such a determination is an evaluation of the product's performance during the test meaningful. Where test methods are used that are promulgated by nationally accepted consensus standards organizations, such as ASTM, ANSI, etc., in general it need only be determined that such method truly applies to the specific product and intended use.

In recognition of the above, the test report submission requirements should include the following:

1. Identification of the specimen tested (manufacturer, type, model number, source of supply, etc.).
2. A detailed description or drawing of the physical characteristics of the specimen, including condition (age, repair, etc.).
3. Number of tests and sampling technique used in selection of specimens.
4. Identification of test method used (if a standard test method) or a detailed description of the test procedure, equipment, and instrumentation used.
5. Tabulation of numerical values associated with test, such as loadings, voltage, etc., and corresponding result readings (e.g. deflections), giving the time scale involved.
6. Listing or identification of any significant test conditions not indicated above (such as ambiant air temperature, humidity, etc.).
7. Date of test.
8. Name and address of testing organization or laboratory.
9. Signature of the laboratory's officer or authorized representative (generally a test engineer in charge who is a professional engineer), and date of signature.

c. Compliance Assurance Program

Part IV, Section 2(B) of the Model Rules and Regulations provides for the separate submittal, evaluation and approval of a manufacturer's compliance assurance program that meets the requirements set forth in Part V, Section 2. The latter submittal requirements have been further clarified and expanded in the administrative interpretations outlined in CES Document No. S-09 of this report. CES Document No. E-10, "Evaluation Checklist - Compliance Assurance Manual," has also been developed to set forth the major areas to check during the evaluation of a manufacturer's submitted compliance assurance manual. The evaluation checklist should be considered as an aid to the evaluator to preclude overlooking any major area of compliance activity. It cannot be stressed strongly enough, however, that the evaluation of the compliance assurance manual describing a manufacturer's compliance assurance program should be reviewed and thoroughly evaluated in consort with the technical review and evaluation of the manufacturer's building system.

There should be a complete and open understanding of the design features and applicable code limitations of the manufacturer's building system as well as an appreciation for critical fabrication processes that may be single failure points and affect life safety as latent failures in the installed system. For these reasons, the evaluation of the compliance assurance manual is as significant and possibly more important than the evaluation of the building system. If possible, and if personnel are properly trained and qualified, the review and evaluation of these two separate submittals (e.g., building system and compliance assurance manual) should be conducted by the same individuals.

It should be pointed out that the "Evaluation Checklist - Compliance Assurance Manual" (e.g., CES Document No. E-10) is not necessarily a comprehensive listing of all compliance assurance inspection activities and completion should not be considered as a complete approval evaluation. As indicated above, the critical design factors of the building system and their inspectability for code compliance during the production sequence should be strictly considered during the evaluation process.

Submitted compliance assurance manuals should address all applicable compliance assurance functions and should reflect a composite of both manufacturer controls and Inspection Agency verification procedures as required by the regulations. For clarification, it should be pointed out that the compliance assurance program is concerned strictly with all of the regulatory code compliance aspects of the construction and not directly with other attributes of manufactured building quality control, such as appearance, finish and other cosmetic factors. These factors, however, may be indicators of how conscientious manufacturers are about code compliance of the construction.

The "Evaluation Checklist - Compliance Assurance Manual" should be filled out for each manual reviewed with any questionable areas noted on the forms or in the manual itself. Questionable areas in the submitted manual can be clarified during the on-site facility evaluation of the manufacturer's plant, which is also a key part of the evaluation process. Manuals which do not provide sufficient detail to assure construction compliance should be disapproved.

As part of the evaluation process, Part IV, Section 4(A) requires that the manufacturing facility be evaluated. CES Document No. E-11, Manufacturing Facility Evaluation Report, was developed to aid in this evaluation and to report the evaluation results.

EVALUATION CHECKLIST — COMPLIANCE ASSURANCE MANUAL

INSPECTION AGENCY: _____ STATE: _____

MANUFACTURER: MODEL: APPLICATION NO.

REFERENCE	DESCRIPTION	COMPLIANCE YES	COMPLIANCE NO	REMARKS
	GENERAL REQUIREMENTS			
	1. Inspection Agency identified. (NOTE: If not submitted separately, detailed qualifications of the Inspection Agency should also be presented). 2. Manual approved by Inspection Agency. 3. Manual is properly indexed (including appropriate justification to omit any compliance assurance requirements which may not apply to manufacturer's system). 4. Individual plant name and location identified. 5. Manual contains specimens of all inspection forms, records, checklists, labels, tags, stamps, insignia, etc. for both manufacturer and Inspection Agency along with their intended usage for compliance assurance activities. 6. Manual contains a brief introduction to describe the type of manufactured buildings or components to be fabricated along with the purpose for the compliance assurance manual to control construction compliance. 7. Manual contains copy of contract between manufacturer and Inspection Agency or an officially signed statement by a responsible officer of the manufacturer that such an agreement is in force.			
	A. ORGANIZATION REQUIREMENTS			
V,2(A)(1)	1. The procedure for "Revision of Compliance Assurance Manual" provides for: a. Changes to be submitted to the Administrative Agency within ten (10) days of the change.			

EVALUATION CHECKLIST — COMPLIANCE ASSURANCE MANUAL (CONTINUED)

REFERENCE	DESCRIPTION	COMPLIANCE YES	COMPLIANCE NO	REMARKS
	b. Manufacturer changes to manual to be coordinated with the Inspection Agency.			
	c. Three (3) month periodic review of manual by manufacturer and Inspection Agency.			
V,2(A)(2)	2. The "Organizational Structure" chart indicates:			
	a. The respective manufacturer and Inspection Agency organizational elements responsible for compliance assurance.			
	b. That the manufacturer's compliance control activity is functionally independent from the production department.			
	c. In addition to the chart, the manual defines the responsibility and authority of the compliance assurance program.			
V,2(A)(2)(a)	3. Under "Training and Qualifications" of compliance personnel, the manual provides:			
	a. The identification of the person responsible for directing construction compliance activities along with his background qualifications and training.			
	b. Job descriptions and resumes for compliance control personnel.			
	c. Inspection training programs, if any.			
V,2(A)(3)	4. A "Uniform System of Audits" is included in the manual which provides:			
	a. Audit inspection checklists for manufacturer and Inspection Agency monitoring of program performance.			
	b. That summary audit reports will be prepared by the Inspection Agency and submitted to the Administrative Agency on at least a quarterly basis.			

EVALUATION CHECKLIST — COMPLIANCE ASSURANCE MANUAL (CONTINUED)

REFERENCE	DESCRIPTION	COMPLIANCE YES	COMPLIANCE NO	REMARKS
V,2(A)(4)	5. The procedure for maintenance of "Compliance Records" provides for: a. Records to be maintained of all essential construction compliance inspections and/or production tests on a production unit basis. b. Inspection Agency and manufacturer records of compliance to be available for Administrative Agency review for a minimum period of time as may be required by the Administrative Agency. c. Records to be maintained current, complete and accurate.			
V,2(A)(5)	6. The procedure for "Control of Changes" includes: a. Changing of all applicable compliance documentation (e.g., checklists) when approved building system changes are made. b. Control of plant distribution of all documents and changes thereto affecting construction compliance.			
V,2(A)(6)	7. The procedure for "Control of Working Drawings" includes: a. The method by which shop level or working drawings, if used, are controlled and reviewed for compliance. b. A system to control subsequent changes to working drawings.			
V,2(A)(7)	8. The manual contains a description for the unit "Serial Numbering System" or similar identification technique which will be utilized in the plant.			

EVALUATION CHECKLIST — COMPLIANCE ASSURANCE MANUAL (CONTINUED)

REFERENCE	DESCRIPTION	COMPLIANCE YES	COMPLIANCE NO	REMARKS
	a. The description indicates the point in the production flow at which such identification will be initiated. b. Identification will be in a uniform and accessible location on production units.			
V,2(A)(8)	9. The procedure for "Control of Labels": a. Identifies Inspection Agency and manufacturer personnel who will have responsibility for release and/or control of labels. b. Contains administrative procedures for the issuance, handling, possession, safekeeping and procurement of labels. c. Contains provision for using a "Label Control Record".			
	B. MATERIALS CONTROL			
V,2(B)(1)	1. The "Control of Procurement" procedure in the manual provides for: a. Objective evidence of compliance (e.g., grade marks, labels, product listings, etc.) to be provided by suppliers, where applicable. b. Incorporation of all design and compliance requirements in purchase orders and subcontracts.			
V,2(B)(2)	2. "Receiving Inspection" checklists are provided in the manual which: a. Provide instructions for evaluating raw materials and supplies upon receipt. b. Contain appropriate accept/reject criteria for each inspection characteristic.			

EVALUATION CHECKLIST — COMPLIANCE ASSURANCE MANUAL (CONTINUED)

REFERENCE	DESCRIPTION	COMPLIANCE YES	COMPLIANCE NO	REMARKS
V,2(B)(3)	3. The manual contains instructions for "Protection of Materials" which: a. Provide that materials will be adequately stored and protected from weather, corrosion, deterioration, mechanical damage and other adverse conditions.			
V,2(B)(4)	4. The manual describes a system for the "Disposition of Rejected Materials" which: a. Contains a procedure for the positive identification and segregation of nonconforming materials. b. Requires that any repair or rework operations will be in accordance with approved manufacturer procedures.			
	C. PRODUCTION CONTROL			
V,2(C)(1)	1. There is a procedure defining "Corrective Action" which: a. Provides for prompt detection of noncompliances and for correction of assignable causes adverse to construction compliance.			
V,2(C)(2)	2. The procedure for control of "Testing and Inspection Equipment" provides: a. Identification of each item of required equipment and the station at which each will be used. b. For equipment maintenance and, as necessary, periodic calibration. c. That equipment calibration records will be maintained current.			

EVALUATION CHECKLIST — COMPLIANCE ASSURANCE MANUAL (CONTINUED)

REFERENCE	DESCRIPTION	COMPLIANCE YES	COMPLIANCE NO	REMARKS
V,2(C)(3)	3. The manual contains a procedure outlining details for "Frequency of Inspection" for surveillance inspections of production units by personnel of the Inspection Agency.			
V,2(C)(4)	4. The manual includes a provision for "Authority for Compliance Assurance" which: a. Provides that the manufacturer's compliance control activity or the Inspection Agency have authority to reject noncompliant construction. b. Allows inspectors to refuse to attach labels to noncompliant units until such time as they have been brought into compliance. c. Gives authority to the Inspection Agency to inspect all units produced prior to a unit being found deficient and subsequent to the last unit previously inspected.			
V,2(C)(5)	5. "Production Flow Diagrams" of the plant are provided which: a. Depict the sequence, type, and frequency of inspections by the manufacturer and Inspection Agency. b. Reference applicable In-plant Inspection Checklists for each station. c. Designate specific "hold" points beyond which units cannot pass without inspection. d. Indicate storage areas both in and outside plant buildings.			
V,2(C)(6)	6. In-plant "Inspection Checklists" for each production station are contained in the manual which:			

EVALUATION CHECKLIST — COMPLIANCE ASSURANCE MANUAL (CONTINUED)

REFERENCE	DESCRIPTION	COMPLIANCE YES	COMPLIANCE NO	REMARKS
	a. Depict the production sequence (as represented by the "Production Flow Diagrams"). b. Provide for objective inspection of all regulated aspects of the construction by inspection personnel (manufacturer or Inspection Agency). c. Have been concurred in by the Inspection Agency. d. Contain an "actual design requirement" entry for each of the "essential characteristics of inspection" for each station.			
V,2(C)(7)	7. The manual contains any applicable "Code Compliance Workmanship Standards" to supplement or clarify acceptance standards set by codes, drawings or inspection checklists.			
V,2(C)(8)	8. The procedure for "Disposition of Noncompliant Construction" a. Provides for positive identification of units with noncompliant construction and any other suspect units produced prior to a unit being found deficient and subsequent to the last unit previously inspected.			
	D. FINISHED PRODUCT CONTROL			
V,2(D)(1)	1. The manual contains a procedure for "Final Inspection and Certification" which: a. Provides for an overall compliance check of units prior to being labeled. b. Requires checklist verification that the approved certification label and manufacturer's data plate, as applicable, have been properly affixed and bear correct information.			

EVALUATION CHECKLIST — COMPLIANCE ASSURANCE MANUAL (CONTINUED)

REFERENCE	DESCRIPTION	COMPLIANCE YES	COMPLIANCE NO	REMARKS
	c. Requires that label control records be maintained.			
V,2(D)(2)	2. The "Handling and Storage" inspection procedure:			
	a. Provides for periodic inspection of stored units to prevent deterioration or damage.			
	b. Contains procedures for handling of units.			
V,2(D)(3)	3. The procedure for "Packing, Packaging and Shipping" include			
	a. Inspection characteristics to verify protection of plumbing, mechanical or electrical subsystems and any included appliances and fixtures from subsequent damage in shipment.			
V,2(D)(4)	4. The procedure for "Transportation" controls provides:			
	a. For in-transit and on-site verification checks for damage.			
	b. That site receiving inspection reports or other documentary evidence will be available to local enforcement agencies.			
	E. INSTALLATION CONTROL			
V,2(E)(1)	1. The manual contains "Installation Control" procedures which:			
	a. Indicates the frequency and type of compliance inspection checks for			
	(1) site work (2) foundations and substructure (3) utilities (4) installation (5) functional testing			

EVALUATION CHECKLIST — COMPLIANCE ASSURANCE MANUAL (CONTINUED)

REFERENCE	DESCRIPTION	COMPLIANCE YES	COMPLIANCE NO	REMARKS
V,2(E)(2)	2. The procedure for handling "Field Repairs": a. Contains criteria for the builder/erector outlining limits for field repairs. b. Provides for reporting to the manufacturer and Inspection Agency of all field noncompliances attributable to inadequate plant inspection. c. Provides for withdrawing labels from units found not in compliance in the field.			
	F. PERMISSION FOR INSPECTION			
V,2(F)	The manufacturer has provided written permission, signed and notarized, for the Administrative Agency to inspect the manufacturing facilities, products, and building sites under his control at any reasonable time without prior announcement.			

MANUFACTURING FACILITY EVALUATION REPORT

The Manufacturing Facility Evaluation Report has been developed as a suggested aid and report format for conducting the inspection survey of the manufacturer's plant facilities as required by Part IV, Section 4(A) of the Rules and Regulations. The purpose of this plant inspection by the Evaluation Agency or Administrative Agency is to determine that the provisions of the compliance assurance manual as submitted for evaluation are in fact implemented, or can be readily implemented, as soon as actual production starts (after approval of both the building system and the compliance assurance program). Where a plant is already in operation, the survey or inspection of the facility may also include the evaluation of prototype or production unit compliance in conjunction with the preparation of "certification reports."*

Pages 3 and 4 of this document give a suggested checklist to be used in the plant evaluation. A suggested format to be used by the plant evaluation inspection team for reporting the results of its evaluation is given on page 2. Page 5 is a suggested evaluation work sheet to be used when evaluating a plant in operation and where the compliance of units under production is to be included in the evaluation, and page 6 gives a suggested format for reporting the results of such unit compliance inspections. This form is to be used in conjunction with the report form given on page 2.

The Manufacturing Facility Evaluation Report could also be utilized by the Administrative Agency in the conduct of its monitoring responsibilities of Inspection Agencies as required by Part IV, Section 4(D) of the Rules and Regulations.

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*"Certification Reports" are utilized in certain state regulatory programs as a guide for the manufacturer and inspection agency to determine compliance.

STATE OF _____

[*Name and address of Administrative Agency or Evaluation Agency*]

MANUFACTURING FACILITY EVALUATION REPORT

NAME OF MANUFACTURER: _____

PLANT LOCATION: _____

_____

APPLICATION NO: _____

BUILDING SYSTEM APPROVAL NO. (IF AVAILABLE): _____

NAME OF INSPECTION AGENCY: _____

ADDRESS: _____

_____

DESCRIPTION OF BUILDING SYSTEM: _____

_____

_____

_____

_____

PERSONS CONTACTED (NAMES, TITLES, AFFILIATIONS):

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

EVALUATION TEAM SUMMARY COMMENTS - (SEE FOLLOWING PAGES OF THIS REPORT FOR DETAILS):

_____

_____

_____

_____

_____

_____

_____

_____

RECOMMENDATION:

- [ ] ACCEPTABLE MANUFACTURING FACILITY EVALUATION
- [ ] UNACCEPTABLE - DISAPPROVE COMPLIANCE ASSURANCE MANUAL
- [ ] UNACCEPTABLE - DISAPPROVE PLANT
- [ ] UNACCEPTABLE - DISAPPROVE INSPECTION AGENCY
- [ ] OTHER RECOMMENDATION: _____

_____

NAME, SIGNATURE AND DATE OF EVALUATION TEAM MEMBERS:

_____ _____ _____

_____ _____ _____

Page ____ of ____

MANUFACTURING FACILITY EVALUATION REPORT

Evaluation worksheet for determining adequacy of compliance assurance program

AREA FOR EVALUATION	SATISFACTORY		EXPLANATION OF ITEMS CHECKED "NO"
	YES	NO	
Manufacturer's compliance organization has independence from production department.			
Compliance control personnel are adequately trained and qualified.			
Checklists for a "uniform system of audits" are maintained by mfgr. or Inspection Agency.			
Compliance records are maintained by manufacturer and Inspection Agency.			
Building system and compliance assurance manual changes are adequately controlled.			
"Working drawings", if used, are adequately controlled.			
A unit identification or serial numbering system is utilized.			
Certification labels are adequately controlled by Inspection Agency and/or manufacturer.			
Receiving inspection checklists are utilized.			
Storage and handling of materials is adequate.			
Rejected raw materials are identified and dispositioned.			
Corrective action is implemented and documented, as necessary.			

Evaluation by: _____ Date: _____ Page ____ of ____

MANUFACTURING FACILITY EVALUATION REPORT

Compliance assurance program evaluation worksheet - ontinued.

AREA FOR EVALUATION	SATISFACTORY YES	SATISFACTORY NO	EXPLANATION OF ITEMS CHECKED "NO"
Control of testing and inspection equipment, if any, is adequate.			
Manufacturer frequency of inspection is satisfactory.			
Inspection Agency frequency of inspection is satisfactory.			
Plant or factory layout of stations is satisfactory for all inspections.			
In-plant inspection checklists are utilized at each station in the production sequence.			
In-plant inspection checklists adequately list all essential characteristics of inspection.			
Code compliance workmanship standards are satisfactory.			
Noncompliant construction identified and corrected.			
Compliant units properly labeled and records of labels maintained.			
Certified units properly handled and stored prior to shipment.			
Compliance assurance manual being followed by manufacturer.			
Compliance assurance manual being followed by Inspection Agency.			

Evaluation by: _____ Date: _____ Page ____ of ____

MANUFACTURING FACILITY EVALUATION REPORT

Evaluation worksheet for production unit compliance inspections by station

STATION NO. AND NAME	SYS-TEM*	COMPLIANCE OF MATERIALS	COMPLIANCE OF FABRICATION	REMARKS - include unit serial numbers, where appropriate
	S			
	P			
	M			
	E			
	S			
	P			
	M			
	E			
	S			
	P			
	M			
	E			
	S			
	P			
	M			
	E			
	S			
	P			
	M			
	E			
	S			
	P			
	M			
	E			
	S			
	P			
	M			
	E			
	S			
	P			
	M			
	E			

* S - Structural; P - Plumbing; M - Mechanical; E - Electrical

Use additional evaluation worksheets for remainder of stations

Evaluation by: _____ Date: _____ Page ____ of ____

MANUFACTURING FACILITY EVALUATION REPORT

Summary findings for production unit compliance inspections by station. Describe any building system noncompliances and code violations from Production Station Evaluation Worksheets.

STRUCTURAL ELEMENTS: _____

FIRE PROTECTION CONSIDERATIONS: _____

PLUMBING SYSTEM: _____

MECHANICAL SYSTEM: _____

ELECTRICAL SYSTEM: _____

Use additional sheets as necessary

Evaluated by: _____ Date: _____ Page ____ of ____

5.5. Approval and Disapproval

Approval of a building system or compliance assurance program application is signified by appropriately stamping each sheet of the building system or compliance assurance manual and by preparation of a building system approval report. If an application is disapproved, a notice is sent to the manufacturer and the documents submitted are returned unmarked.

It is recognized that a mechanism should exist for the Evaluation Agency to notify the manufacturer of minor deficiencies and to allow the manufacturer to make necessary corrections without the need for a complete resubmission. The determination whether a deficiency is minor is solely the responsibility of the Evaluation Agency and it should be understood that, outside of the appeals procedures regulated in Part VIII, Sections 1 through 4, the conduct of the above suggested meetings and the permission to correct submission documents after initial submission is strictly at the discretion of the Evaluation or Administrative Agency, although such agency should take into consideration that a requirement for full resubmission may constitute a hardship on the manufacturer.

The following model documents relating to approval and disapproval activities have been developed:

CES Document No. A-01	Notice of Completed Evaluation
CES Document No. A-02	Stamps of Approval
CES Document No. A-03	Building System Approval Report

NOTICE OF COMPLETED EVALUATION

The purpose of the Notice of Completed Evaluation is: (1) the notification of the manufacturer of the action taken by the Evaluation Agency; (2) the statement of additional fees due to the agency or refunds due to the manufacturer (in case the sum of the deposit collected was greater than the total of fees required); and (3) if the application is disapproved, the transmittal of the reasons for such disapproval, that is, a list of deficiencies found.

Based on the above purposes, the following information should be contained in the Notice of Completed Evaluation:

1. Name and address of manufacturer;
2. Application number(s);
3. Results of evaluation (approved, disapproved);
4. Fees due by manufacturer to the Administrative or Evaluation Agency; or refund due the manufacturer;
5. In case of disapproval, a list of deficiencies found. A copy of the Evaluation Checklists (CES Documents No. E-04 to E-08 and E-10) may be used for this purpose.
6. In case of approval, a statement that after receipt of the additional fee due (if any), a copy of the approved (stamped) documents will be returned to the manufacturer (together with an approval report if application was for a building systems approval).

Page 2 of this document shows a sample form for the "Notice of Completed Evaluation".

STATE OF _____

[*Name and Address of Administrative Agency*]

[*Name of Manufacturer* / *Address*]

Date _____

RE: NOTICE OF COMPLETED EVALUATION

☐ Building System - Appl. No. _____

☐ C.A. Program - Appl. No. _____

Dear Sir:

☐ Evaluation of your submission for the above application(s) has been completed. This office will issue approval documents upon remittance of evaluation fees payable to _____

☐ Evaluation of your submission for the above application(s) has been completed. Your application is disapproved for the following reasons:

_____

_____

_____

_____

_____

Attachments:

☐ Evaluation Checklists

☐ Documents Returned ☐ plans ☐ specs ☐ calculations ☐ test data ☐ C.A. Manual ☐ other _____

☐ Fee Due $ _____

☐ Refund $ _____

Sincerely,

_____

Signature of Agency Official

_____

Name and Title

STAMPS OF APPROVAL

According to the Rules and Regulations [Part IV, Section 2], the approval of building systems and compliance assurance programs is to be signified by a stamp of approval on each sheet of the submission, "or by other effective means of identification". In Part V, Section 1(A)(7) a space of 3 inches by 4 inches is required on all drawings of a building submission application, and a 3 by 4 inch stamp is used for signifying approval on such drawings. This is in conformance with current practice in many states, and provides sufficient space for the information required on the stamp. Although a similar space is not mandatory on compliance assurance program submissions, the same stamp should be used on the first page or on the cover of the compliance assurance manual, as well as on specifications which may be submitted with a building system. However, the single pages of a compliance assurance manual or of a set of specifications can not conveniently be stamped with a 3 inch by 4 inch stamp. Accordingly, an "other means of identification" of such pages should be used which is smaller and need not contain all the information required on the larger approval stamp. Accordingly, it is suggested that a smaller and simpler stamp be used for such pages. The contents of both stamps are discussed in this document.

Contents of Stamp of Approval

A 2-7/8 inch by 3-7/8 inch stamp of approval should be used. Such stamp should contain as a minimum the following information:

1. Identification of State
2. Identification of Administrative Agency or of Evaluation Agency (if different from the former).
3. A statement that the plans and/or compliance assurance manual have been approved pursuant to the applicable legislation (identify enabling legislation and regulations).
4. A statement that this approval does not authorize any deviation or omissions from valid state or local laws.
5. A statement that the approval of either a building system or a compliance assurance program alone does not authorize the certification of units built according to such system or manual, but that approval for both must be obtained.
6. Approval number.
7. Space for signature of authorized person (including title) and the approval date.

In some states additional information is given on the approval stamp, such as design loads, occupancy class, etc. However, if such information is contained in the Building System Approval Report (CES Document No. A-03) it appears that it need not be repeated on each stamp.

Contents of Alternate Stamp

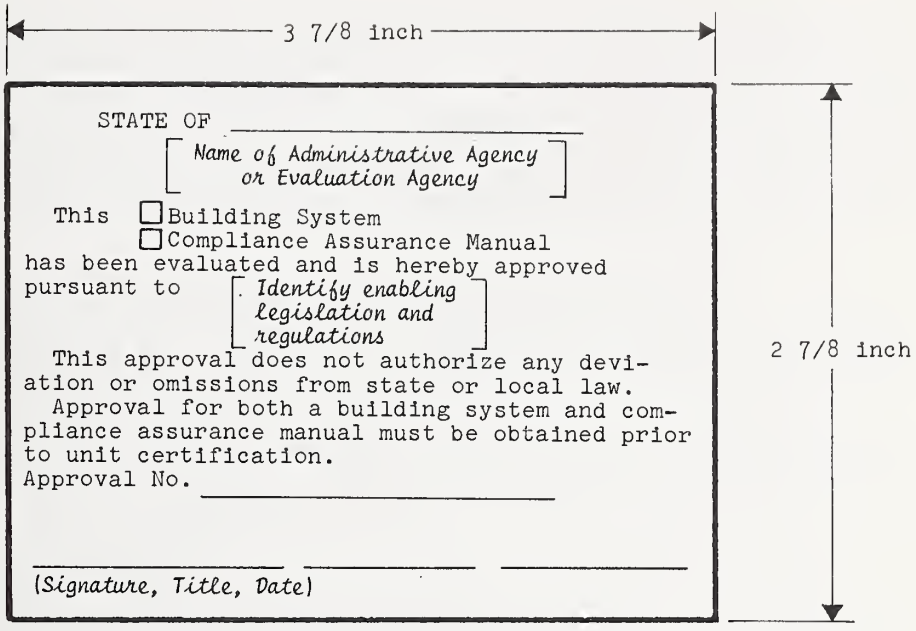
For identifying typewritten pages, such as in a compliance assurance manual, it is suggested that an alternate stamp be used. Such stamp should not be used singly, but only in conjunction with an approval stamp as described above.

The content of such an alternate stamp should be as simple as possible while still performing the function of "identifying" the pages. Accordingly, it is suggested that only the following items be shown.

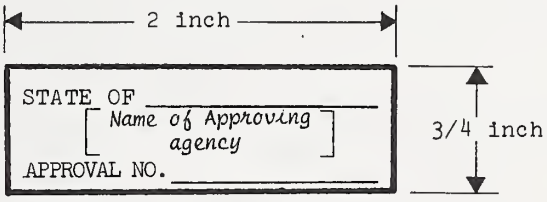
1. Identification of state;
2. Identification of approving agency;
3. Approval number.

It is suggested that such stamp be not greater than 3/4 inch by 2 inch so that it can be placed conveniently on the margin of typewritten pages.

On Page 3 of this document samples for both the Approval Stamp and for the Alternate Stamp are shown.


3 7/8 inch
STATE OF
[Name of Administrative Agency or Evaluation Agency]
This ☐ Building System
☐ Compliance Assurance Manual
has been evaluated and is hereby approved
pursuant to [Identify enabling legislation and regulations]
This approval does not authorize any deviation or omissions from state or local law.
Approval for both a building system and compliance assurance manual must be obtained prior to unit certification.
Approval No.
(Signature, Title, Date)
2 7/8 inch

Approval Stamp for signifying approval of drawings and front page of typed or printed documents.



Alternate Approval Stamp for signifying approval of typed or printed pages.

BUILDING SYSTEM APPROVAL REPORT

The main purposes of the building system approval report are: (1) to notify the manufacturer of the approval of his submission, and (2) indicate the conditions of such approval, particularly a limitation imposed on the use of the building system. In addition, the report serves to transmit such information to the local enforcement agency in whose jurisdiction the manufactured building or building component is to be installed, or to other states in which the manufacturer applies for approval based on reciprocity.

The approval report should contain the following information:

I. Type of Approval: This indicates whether a new system is being approved or a modification, and gives all pertinent approval and application numbers, dates, etc.

II. Identification: In this section the manufacturer, the location of his plant, and any Inspection Agency and/or architect/engineer involved in the design are identified.

III. Documents Submitted: All documents which formed the basis for the approval are to be listed.

IV. Description of Manufactured Building or Component: This section gives pertinent information regarding the approved building or component, including items such as type of occupancy, type of construction, principal construction materials and design parameters (loads and temperatures).

V. Details of Construction: This is a brief description of all major construction systems which form part of the building or component.

VI. Applicable Codes or Standards: The codes and standards used as a basis for the technical evaluation are to be noted in this section.

VII. Installation Instructions: A discussion or list of critical items or provisions that must be observed in the preparation for and installation of certified units on the site.

VIII. Limitations of Approval: Any use limitations of the approved building system, other than those inherent in the information given in IV above, should be clearly stated.

In addition, the name, title, and signature of the person preparing the approval report and of the agency official also must appear on the document.

A sample approval form is given on the following two pages.

Page 1

STATE OF _____

[*Name and Address of Administrative Agency*]

BUILDING SYSTEM APPROVAL REPORT

I. TYPE OF APPROVAL ☐ New System ☐ Modification | APPROVAL REPORT NO.

Date of Approval _____ Expiration Date _____

Previous Approval Nos: ☐ Building System _____ ☐ C.A. Program _____

Building System Application No. _____ Date _____

II. IDENTIFICATION

Name of Manufacturer _____

Address _____

Location of Manufacturing Plant _____

Name of Inspection Agency _____

Address _____

Name of Reg. Architect/Prof. Engineer _____ Reg.No. _____

Address _____ State _____

III. DOCUMENTS SUBMITTED ☐ Plans ☐ Specs ☐ Test Data ☐ Shop Dwgs. ☐ C.A.Manual ☐ Sample

☐ Calculations (Type) _____ ☐ Other (Specify) _____

☐ Other State or Agency Approvals/Listings _____

IV. DESCRIPTION OF MANUFACTURED BUILDING OR COMPONENT

A. Occupancy: ☐ One and Two Family Detached ☐ Other (Specify) _____

B. Type of Construction (classification) _____

C. Type of System: ☐ Unitized Modular ☐ Core Unit ☐ Component

☐ Architectural ☐ Structural ☐ Mechanical ☐ Plumbing ☐ Electrical

☐ Other (Specify) _____

D. Principal Construction Material: ☐ Wood ☐ Concrete ☐ Steel ☐ Masonry

☐ Other (Specify) _____

E. Energy Source: Heating _____ Cooling _____

F. Design Parameters: Live Load ___ Wind Load ___ Snow Load ___ Seismic Load ___

G. Design Temperatures: Summer _____ Winter _____

V. DETAILS OF CONSTRUCTION

Structure: _____

Walls and Partitions: _____

Floor - Ceiling: _____

Roof - Ceiling: _____

BUILDING SYSTEM APPROVAL REPORT (continued) Page 2

DETAILS OF CONSTRUCTION (continued)

Mechanical: _____

Electrical: _____

Plumbing: _____

Other: _____

VI. APPLICABLE CODES OR STANDARDS _____

VII. INSTALLATION INSTRUCTIONS (SEE ATTACHED DETAILED DRAWINGS) _____

A. FIELD INSTALLATION: _____

B. COMPLIANCE ASSURANCE INSPECTIONS AND TESTS: _____

C. REPAIR PROCEDURES _____

VIII. A. LIMITATIONS OF APPROVAL (IF ANY) _____

B. FUTURE REPAIRS AND ALTERATIONS: _____

This is a Building System approval only. For manufactured buildings and/or building components to be certified, an approved concurrent C.A. Program is also required.

Prepared by (Name) _____ Signature _____ Date _____

Signature of Agency Official _____ Date _____

Name and Title _____

(Space for Stamp or Seal)

5.6. Fabrication, Inspection and Certification

In-plant fabrication, inspection and unit certification are the culmination of all the prior administrative aspects of the regulatory process. Being the ongoing operational phase of the program, continued attention should be given these functions by all parties concerned to assure that compliance to an approved building system through a recognized compliance assurance program is in fact maintained.

Figure 2 illustrates the concept for the fabrication, compliance assurance and certification aspects of the regulatory process and identifies the applicable CES documents suggested for these functions. These CES documents are described in the following sections of the report.

The fabrication, inspection and certification functions are primarily the operational responsibility of the manufacturer and the Inspection Agency who each in their own way determine the effectiveness and credibility of the overall regulatory program. A viable compliance assurance program conscientiously implemented by the manufacturer should require a lesser degree of monitoring by the regulatory agencies and the Inspection Agency. Conversely, a manufacturer's inadequate compliance control activity may require almost full-time in-plant monitoring by the Inspection Agency.

Manufacturers should encourage early reporting of code noncompliances. The resultant effects of such noncompliances can be estimated using appropriate records to emphasize the cost of repairs or rework at a later date, such as in recalls after field installation. Aside from the regulatory implications, it is usually found that the costs of noncompliances in terms of extended time schedules and potential latent defects, are higher than the costs of planned preventive actions by means of a viable compliance assurance program.

Manufacturers should also recognize that the compliance assurance program should be responsive to changing needs. Accordingly, the manufacturer should provide for the continual acquisition of current data on the compliance status of production units and the condition of the compliance assurance program through his own management efforts and those independent assessments of the Evaluation Agency or Inspection Agency.

The following documents relate to fabrication, inspection, and certification:

CES Document No. C-01	Manufacturer's Data Plate
CES Document No. C-02	In-Plant Inspection Checklist
CES Document No. C-03	Inspection Report
CES Document No. C-04	Noncompliance Tag
CES Document No. C-05	Prohibited Sales Notice
CES Document No. C-06	Notice of Suspended Activities
CES Document No. C-07	Label
CES Document No. C-08	Label Control Record

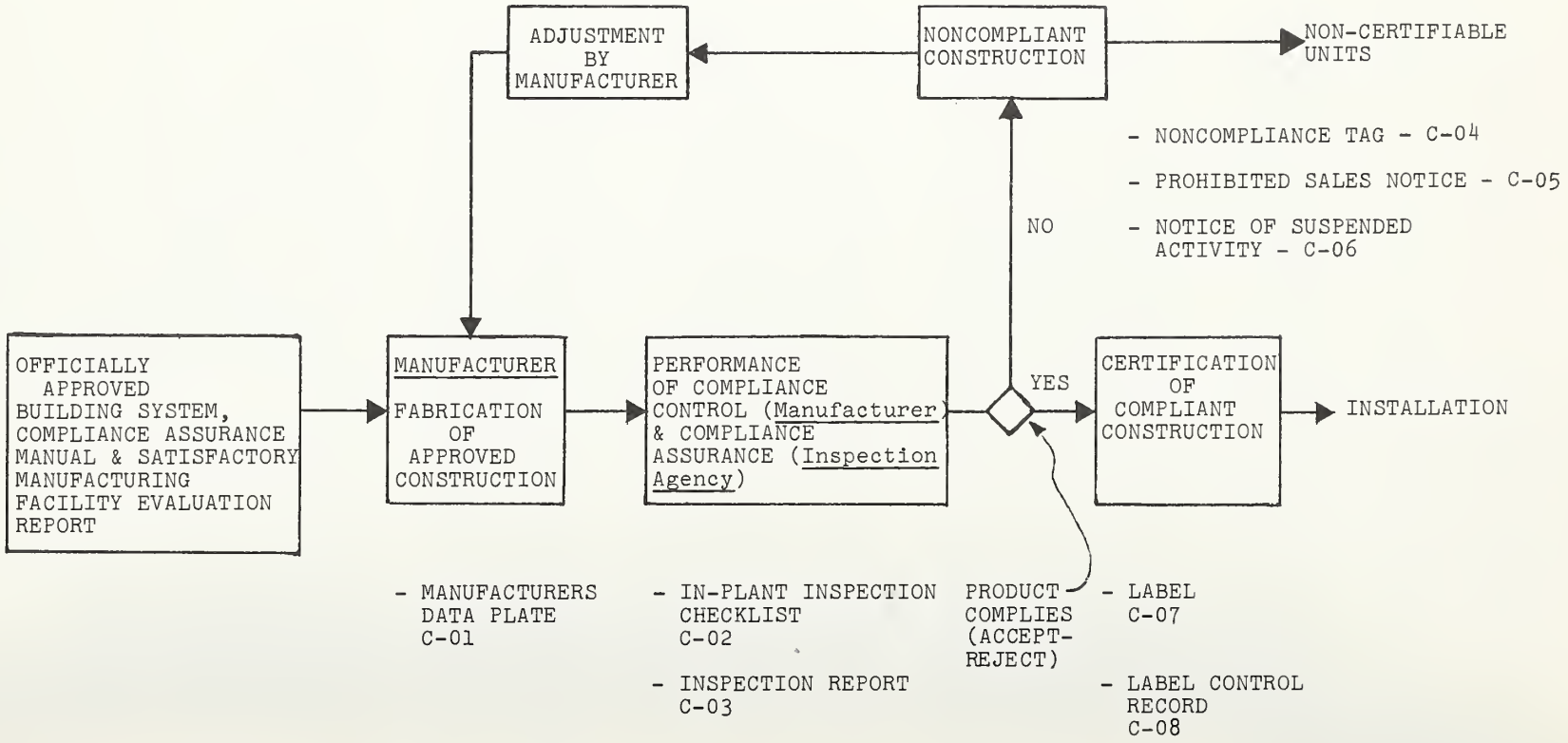

ADJUSTMENT BY MANUFACTURER
NONCOMPLIANT CONSTRUCTION
NON-CERTIFIABLE UNITS
- NONCOMPLIANCE TAG - C-04
- PROHIBITED SALES NOTICE - C-05
- NOTICE OF SUSPENDED ACTIVITY - C-06
NO
OFFICIALLY APPROVED BUILDING SYSTEM, COMPLIANCE ASSURANCE MANUAL & SATISFACTORY MANUFACTURING FACILITY EVALUATION REPORT
MANUFACTURER
FABRICATION OF APPROVED CONSTRUCTION
PERFORMANCE OF COMPLIANCE CONTROL (Manufacturer & COMPLIANCE ASSURANCE (Inspection Agency)
YES
CERTIFICATION OF COMPLIANT CONSTRUCTION
INSTALLATION
- MANUFACTURERS DATA PLATE C-01
- IN-PLANT INSPECTION CHECKLIST C-02
- INSPECTION REPORT C-03
PRODUCT COMPLIES (ACCEPT-REJECT)
- LABEL C-07
- LABEL CONTROL RECORD C-08

FIGURE 2. FABRICATION, INSPECTION, AND CERTIFICATION PROCESS

MANUFACTURER'S DATA PLATE

Part IV, Section 3(A) requires that the manufacturer place certain information directly or by reference on one or more data plates.

The data plates for manufactured buildings are to be permanently mounted on or in the vicinity of the electrical distribution panel or in some other easily accessible location approved by the Administrative Agency. Most data plates currently used are metal with the information either printed or embossed. For manufactured building components the Administrative Agency is given the authority to approve alternate means of supplying the required information. In particular, where the size and/or shape of a component is such that a data plate can not be attached permanently, the information can be given on a tag attached to the component or in a manual crated with the component. Information which is needed by the occupant (user) also should be contained in a manual which is presented to him upon transfer of possession.

The purpose of the data plate is to provide permanently the information needed to identify and properly operate the unit. As stated in the Rules and Regulations, the data plate must contain the following information:

1. Manufacturer's name and address;
2. Serial number of unit;
3. Label serial number;
4. Name and date of applicable nationally recognized codes complied with;
5. Model designation and name of manufacturer of major in-plant installed appliances.

If required by the adopted code, standard, specification or requirement, the Rules and Regulations require that the following additional information also be given on the data plate:

6. Identification of permissible type of gas for appliances and directions for water and drain connection;
7. Snow, wind, seismic, and other live load criteria;
8. Electrical ratings - instructions and warnings on voltage;
9. Special conditions or limitations on use of the unit, including unsuitability for areas in which specified environmental conditions prevail;
10. Methods of assembly or joining multiple units;
11. Type of construction, including fire rating, occupancy class, interior finish flame spread class, and toxicity class;
12. Building height and story limitation;
13. Floor area;
14. Minimum side yard requirements for fire rating.

The information that should be given on the data plate for a specific unit depends on the unit's characteristics and its intended use. Accordingly, some of the above

items may not apply to a given unit, and other information may be needed. In selecting the contents of the data plate, it should be borne in mind that all those items should be recorded on the permanent plate which need to be known after initial installation of the unit on the site, and possibly a long time thereafter. Accordingly, if the initial installation is of a permanence similar to that of conventional construction, instructions for this installation need not be given on the data plate (although it must be furnished by the installer to the erector, builder, or owner in some other form). However, if the unit is intended and designed for later or periodic reinstallation on new sites (such as for example, relocatable schools), installation instructions should also be contained on the data plate. Similarly, the need for including items referring to building and story height limitations, occupancy and zoning, climatic conditions, etc., also depend on the likelihood of either later relocation and/or changes in occupancy and use.

An example of a manufacturer's data plate is shown on page 3 of this document. In the example shown, all items that the Model Rules and Regulations give as mandatory contents are shown. Additional contents which are dependent on codes and other state requirements are included based on the state-of-art study of data plate requirements currently established by the various states.

MANUFACTURER'S DATA PLATE

Manufactured by:

Date of Manufacture: _____ | Serial No. _____ | Label No. _____

Unit complies with Codes and Standards:

Name	Edition Year
_____	_____
_____	_____
_____	_____
_____	_____

Electrical System:

Panel Board _____ Amps. cycle _____ wire _____ phase _____

Number circuits _____ voltage capacity _____ High temperature field service conductors _____ °C

Equipment:

	Capacities	Fuel
Furnace	_____	_____
Water Heater	_____	_____
Air Conditioner	_____	_____

Potable water system tested at ____ psig.

DWV plumbing system tested at ____ psig.

Design Criteria:

Wind load _____ lbs/sq. ft. Floor load _____ lbs/sq. ft.

Roof load _____ lbs/sq. ft.

Roof pitch (/) at ____ lbs/sq. ft. total load.

Seismic zone _____ construction.

Design temperatures: Summer ____ °F; Winter ____ °F

IN-PLANT INSPECTION CHECKLISTS

This document is a production station oriented series of checklists portraying the essential characteristics of inspection by the Inspection Agency during audit inspections of the manufacturer. The checklists presented in this report are for a hypothetical wood frame modular unit produced in a main assembly production sequence. It is not representative of any one manufacturer but is presented in this report to illustrate the approach and degree of detail that should be checked on the manufacturer's production line.

The essential characteristics of inspection have typical suggested callouts for the materials of construction and then the individual fabrication steps for each suggested production station in the sequence. For each characteristic of inspection, a reference (source of design intent) is indicated by an identifying number where the actual design data for each characteristic can be found. Provision is made for entering the actual design conditions on the checklists under "Actual Design Requirement" for each characteristic.

The checklists also contain the suggested methods for determining compliance for each characteristic, identified by letters.

Individual In-Plant Inspection Checklists with the "Actual Design Requirement" entries completed should be submitted as part of the compliance assurance manual submittal for each production model for which approval is sought.

Page 2 of this document contains an index of the separate station checklists. Pages 68 and 69 of this document give the keys for the identification of the design intent reference numbers and compliance determination reference letters.

NOTE - Another form - known as a production "traveler" which accompanies each manufactured unit as it goes through the manufacturing process - is used effectively by many companies. Such a document is far less detailed than that suggested in the In-Plant Inspection Checklists contained herein.

Index to Station Checklists

Station	CES Document Page Number	Report Page Number
Floor Framing Station	3	165
Floor Insulation Station	5	167
Floor Sheathing Station	6	168
Wall Framing and Setting Station	9	171
Wall Insulation Station	12	174
Interior Wall Covering Station	13	175
Ceiling/Roof Framing and Setting Station	16	178
Interior Ceiling Covering Station	19	181
Plumbing Station	22	184
Electrical Station	31	193
Mechanical (HVAC) Station	44	206
Ceiling Insulation Station	53	215
Miscellaneous Components (Window, Exit Door, and Stairway) Installation Station	55	217
Wall Sheathing Station	57	219
Exterior Siding Station	59	221
Roof Sheathing Station	62	224
Finish Roofing Station	65	227
Final Compliance Inspection and Certification Station	67	229

IN-PLANT INSPECTION CHECKLIST

PAGE __ OF __

MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: FLOOR FRAMING STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS: Structural framing members - joists, beams, stringers, blocking, bridging, etc.			
(a) Species	1		A, D
(b) Grade	1		A, D
(c) Size(s)	1		E_1
(d) Moisture Content	1, 2		D, E_2
(e) Preservative Treatment	1, 2		D, F
(f) Condition/Tolerances (e.g., warp, bow, splits, twist, etc.)	2, 3		D, E_1
2. OPERATIONS:			
(a) Measuring and Cutting			
(1) Span (joists)	1		E_1, G
(b) Drilling and Notching			
(1) Holes	1, 2, 4		D, E_1
(2) Notches	1, 2, 4		D, E_1
(c) Layout/Spacing			
(1) Location and Orientation (joist setting with crown up)	1, 2		D, E_1

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE ___ OF ___

STATION NAME: FLOOR FRAMING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(2) Laps and Splices	1, 2		D, E_1
(3) End Bearing	1, 2		D, F
(4) Lateral Support (e.g., blocking, bridging)	1, 2		D, F
(d) Framing for Floor Openings (e.g., stairwells)	1		
(1) Location (per drawing)	1		D, E_1
(2) Framing (per drawing)	1		D, F
3. FASTENERS: Nails, bolts/screws, joist hangers			
(a) Size	1, 2		B, D, E_1
(b) Type/Grade	1, 2, 6		B, D
(c) Condition	2		D, F, G
4. CONNECTIONS:			
(a) Number (of fasteners)	1		D
(b) Location and Spacing	1, 2		D, E_1
(c) Method (e.g., toenail, end-nail)	1, 2		D, F
(d) Bearing of Members	2		D, F
(e) Washers (w.bolts/screws)	1, 2		D, F
(f) Workmanship	2		D, F, G

IN-PLANT INSPECTION CHECKLIST

PAGE ___ OF ___

MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: FLOOR INSULATION STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS: Moisture barrier, thermal insulation			
(a) Size (e.g., thickness, weight)	1		B, D
(b) Type/Grade	1		B, D
(c) Condition (e.g., dry, undamaged)	2		D, F, G
2. INSTALLATION:			
(a) Moisture Barrier			
(1) Placement (e.g., continuity)	1, 2		D
(2) Attachment	1, 2		D
(b) Thermal Insulation			
(1) Placement	1, 2		D, E_1
(2) Attachment (method of fastening, location and spacing)	1, 2		D, E_1
(c) Workmanship	2		D, F, G

IN-PLANT INSPECTION CHECKLIST

PAGE __ OF __

MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: FLOOR SHEATHING STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS: Plywood, proprietary sheathing types			
(a) Size (e.g., thickness)	1		B, D, F_1
(b) Type/Grade	1		A, B, D
(c) Condition/Tolerances	2, 5		D, F_3, G
2. FASTENERS:			
(a) Nails, Staples			
(1) Size	1, 2		B, D, E_1
(2) Type/Grade	1, 2, 6		B, D
(3) Condition	2		D, F, G
(b) Adhesives			
(1) Type	1, 2		B, D
(2) Age, Shelf Life	2		B, D
(3) Mixing Schedule	2		B, D
(4) Coupon Tests	2		D, H
3. INSTALLATION:			
(a) Measuring and Cutting	1		D, E_1
(b) Layout			

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: FLOOR SHEATHING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(1) Dimensions	1		D, E_1
(2) Location and Orientation	1		D
(3) Laps and Splices	1		D
(c) Nails, Staples			
(1) Number	1		D
(2) Location and Spacing	1		D, E_1
(3) Workmanship	2		D, F, G
(d) Adhesives			
(1) Application	1, 2		D
(2) Pressure	1, 2		D
(3) Temperature-or special handling conditions	1, 2		D
(4) Curing (drying time before next operation)	1, 2		D
(5) Workmanship	2		D, F, G
(e) Methods			
(1) Face grain orientation with respect to joists	2		D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: FLOOR SHEATHING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(2) Joints centered over joists, rafters	2		D
(3) Workmanship	2		D, F, G

IN-PLANT INSPECTION CHECKLIST

PAGE __ OF __

MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: WALL FRAMING AND SETTING STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS: Structural framing members--studs, plates, lintels, etc.			
(a) Species	1		A, D
(b) Grade	1		A, D
(c) Size(s)	1		E_1
(d) Moisture Content	1, 2		D, E_2
(e) Condition/Tolerances (e.g., warp, bow, splits, twist,etc)	2, 3		D, E_1
2. OPERATIONS:			
(a) Measuring and Cutting	1		E_1, G
(b) Drilling and Notching	1, 2, 4		D, E_1
(c) Layout/Spacing	1, 2		D, E_1
(d) Framing for Wall Openings	1		
(1) Location (per drawing)	1		D, F_1
(2) Framing (per drawing)	1		D, F

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: WALL FRAMING AND SETTING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
3. FASTENERS: Nails, bolts/screws, staples			
(a) Size	1, 2		B, D, F_1
(b) Type/Grade	1, 2, 6		B, D
(c) Condition	2		D, F, G
4. CONNECTIONS:			
(a) Number (of fasteners)	1		D
(b) Location and Spacing	1, 2		D, F_1
(c) Method (e.g., toenail, end-nail)	1, 2		D, F
(d) Bearing of Members	2		D, F
(e) Plumb and Square	2		D, F
(f) Workmanship	2		D, F, G
5. ERECTION/SETTING OF WALLS:			
(a) Connections/Fasteners			
(1) Number (of fasteners)	1		D
(2) Location and Spacing	1, 2		D, F_1

N-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE ___ OF ___

TATION NAME: WALL FRAMING AND SETTING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(3) Method	1, 2		D, F
(b) Bearing of Members	2		D, F
(c) Workmanship	2		D, F, G

IN-PLANT INSPECTION CHECKLIST

PAGE __ OF __

MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: WALL INSULATION STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS: Moisture barrier, thermal insulation			
(a) Size (e.g., thickness, weight)	1		B, D
(b) Type/Grade	1		B, D
(c) Condition (e.g., dry, undamaged)	2		D, F, G,
2. INSTALLATION:			
(a) Moisture Barrier			
(1) Placement (e.g., continuity)	1, 2		D
(2) Attachment	1, 2		D
(b) Thermal Insulation			
(1) Placement	1, 2		D, E1
(2) Attachment (method of fastening, location, and spacing)	1, 2		D, E1
(3) Workmanship	2		D, F, G

IN-PLANT INSPECTION CHECKLIST

PAGE __ OF __

MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: INTERIOR WALL COVERING STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS: Gypsum wallboard			
(a) Size (thickness)	1		B, D, E_1
(b) Type/Grade	1		A, B, D
(c) Condition	2		D, F, G
2. FASTENERS:			
(a) Nails, screws, wallboard clips			
(1) Size	1, 2		B, D, E_1
(2) Type/Grade	1, 2, 6		B, D
(3) Condition	2		D, F, G
(b) Adhesives			
(1) Type	1, 2		B, D
(2) Age, Shelf Life	2		B, D

N-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: INTERIOR WALL COVERING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(3) Mixing Schedule	2		B, D
(4) Coupon Tests	2		D, H
3. INSTALLATION:			
(a) Nails, screws			
(1) Number (of fasteners)	1		D
(2) Location and Spacing	1		D, E_1
(3) Workmanship	2		D, F, G
(b) Adhesives			
(1) Application	1, 2		D
(2) Pressure	1, 2		D
(3) Temperature-or special handling conditions	1, 2		D
(4) Curing (drying time before next operation)	1, 2		D
(5) Workmanship	2		D, F, G
(c) Method			
(1) Joints centered over supports	2		D
(2) Tape and spackle joints	2		D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: INTERIOR WALL COVERING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(3) Workmanship	2		D. F. G

IN-PLANT INSPECTION CHECKLIST

PAGE __ OF __

MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: CEILING/ROOF FRAMING AND SETTING STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS: Structural framing members-rafters, joists, roof trusses, etc.			
(a) Species	1		A, D
(b) Grade	1		A, D
(c) Size(s)	1		E_1
(d) Moisture Content	1, 2		D, F_2
(e) Condition/Tolerances (e.g., warp, bow, splits, twist, etc.)	2, 3		D, E_1
2. OPERATIONS:			
(a) Measuring and Cutting			
(1) Span (joists)	1		F_1, G
(b) Drilling and Notching	1, 2, 4		D, F_1
(c) Layout/Spacing	1, 2		D, F_1
(d) Laps and Splices	1, 2		D, F_1

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: CEILING/ROOF FRAMING AND SETTING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(e) End Bearing	1, 2		D, F
(f) Framing for Openings			
(1) Location (per drawing)	1		D, F_1
(2) Framing (per drawing)	1		D, F
3. FASTENERS: Nails, bolts/screws, trussplates, etc.			
(a) Size	1, 2		B, D, E_1
(b) Type/Grade	1, 2, 6		B, D
(c) Condition	2		D, F, G
4. CONNECTIONS:			
(a) Number (of fasteners)	1		D
(b) Location and Spacing	1, 2		D, E_1
(c) Method (e.g., toe-nail, end-nail)	1, 2		D, F

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: CEILING/ROOF FRAMING AND SETTING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(d) Bearing of Members	2		D, F
(e) Plumb and Square	2		D, F
(f) Workmanship	2		D, F, G
5. ERECTION/SETTING OF CEILINGS/ ROOFS:			
(a) Connections/Fasteners			
(1) Number (of fasteners)	1		D
(2) Location and Spacing	1, 2		D, F_1
(3) Method	1, 2		D, F
(b) Bearing of Members	2		D, F
(c) Workmanship	2		D, F, G

IN-PLANT INSPECTION CHECKLIST

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MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: INTERIOR CEILING COVERING STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS: Gypsum wallboard			
(a) Size (thickness)	1		B, D, E_1
(b) Type/Grade	1		A, B, D
(c) Condition	2		D, F, G
2. FASTENERS:			
(a) Nails, screws, wallboard clips			
(1) Size	1, 2		B, D, E_1
(2) Type/Grade	1, 2, 6		B, D
(3) Condition	2		D, F, G
(b) Adhesives			
(1) Type	1, 2		B, D
(2) Age, Shelf Life	2		B, D
(3) Mixing Schedule	2		B, D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: INTERIOR CEILING COVERING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(4) Coupon Tests	2		D, H
3. INSTALLATION:			
(a) Nails, screws			
(1) Number (of fasteners)	1		D
(2) Location and Spacing	1		D, F_1
(3) Workmanship	2		D, F, G
(b) Adhesives			
(1) Application	1, 2		D
(2) Pressure	1, 2		D
(3) Temperature-or special handling conditions	1, 2		D
(4) Curing (drying time before next operation)	1, 2		D
(5) Workmanship	2		D, F, G
(c) Method:			
(1) Joints centered over supports	2		D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: INTERIOR CEILING COVERING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(2) Tape and spackle joints	2		D
(3) Workmanship	2		D, F, G

IN-PLANT INSPECTION CHECKLIST

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MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: PLUMBING STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS:			
(a) Pipe - D.W.V.			
(1) Size(s)	1		D, E_1
(2) Type/Grade	1		A, B, D
(3) Condition	2		D, F, G
(b) Pipe - water supply and distribution			
(1) Size	1		D, E_1
(2) Type/Grade	1		A, B, D
(3) Condition	2		D, F, G
(c) Pipe - gas fuel supply piping			
(1) Size	1		D, E_1
(2) Type/Grade	1		A, B, D
(3) Condition	2		D, F, G
(d) Plumbing fixtures/drains (traps, trap arms)			
(1) Type/Size	1		D, E_1
(2) Label/marking	1		A, B, D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: PLUMBING STATION STATION NO..

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(e) Valves			
(1) Type/Size	1		D, E_1
(2) Label/marking	1		A, B, D
(f) Appliances and equipment			
(1) Type/Size	1		D, E_1
(2) Label/marking	1		A, B, D
(g) Miscellaneous - air gaps, pipe coatings, compounds, solder, etc.			
(1) Type	1		A, B, D
(2) Label/marking	1		A, B, D
2. INSTALL DRAINAGE SYSTEM:			
(a) Piping			
(1) Location	1		D
(2) Measuring and Cutting	1, 2		D, E_1, G
(3) Reaming	1, 2		D
(4) Grade and pitch	1		D, E_1
(5) Direction	1		D
(6) Hangers and Supports	1, 2		D, F, G
(7) Fittings and Connections	1, 2		D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: PLUMBING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(8) Direction	1, 2		D
(9) Cleanouts			
- Size	1		D, E_1
- Location	1		D
- Accessibility	1		D, G
(10) Flashing and Weatherproofing	1, 2		D
(11) Workmanship	2		D, F, G
3. INSTALL VENTING SYSTEM:			
(a) Installation -			
(1) Connections and Fittings	1		D
(2) Terminations	1		D, E_1
(3) Location	1		D
(4) Offset	1		D, E_1
(5) Height	1		D, E_1
(6) Reaming	1, 2		D
(7) Flashing and Weatherproofing	1, 2		D

IN-PLANT INSPECTION CHECKLIST (CONTINUED) PAGE ___ OF ___

STATION NAME: PLUMBING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(8) Workmanship	2		D, F, G
(9) Testing	2		D
4. INSTALL TRAPS AND TRAP ARMS:			
(a) Installation -			
(1) Fixtures serviced	1		D
(2) Location/Accessibility	1		D
(3) Length	1		D, E_1
(4) Vertical Location	1		D, E_1
(5) Horizontal Location	1		D, E_1
(6) Slope and Pitch	1		D, E_1
(7) Workmanship	2		D, F, G
5. INSTALL JOINTS AND CONNECTIONS			
(a) Installation -			
(1) Location	1		D
(2) Reaming	1, 2		D
(3) Pipe joint compound	1, 2		D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: PLUMBING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(4) Cleanout plugs			
- Size	1		D
- Lubrication	1		D
(5) Caulking	1, 2		D
(6) Solder and Flux	1, 2		D
(7) Flaring	1, 2		D
(8) Adaptors	1		D
(9) Solvent welding	1, 2		D
(10) Soldering and bronzing	1, 2		D
(11) Compression Fittings	1, 2		D
(12) Slip joints	1		D
(13) Accessibility	1		D, G
(14) Unions			
- Location	1		D
- Accessibility	1		D, G
(15) Waterproofing and counter flashing	1, 2		D, G
(16) Reducers - Increasers			
- Size	1		D
- Adaptors	1		D
(17) Workmanship	1, 2		D, F, G

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: PLUMBING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
6. INSTALL INDIRECT WASTE PIPING, WET VENTED SYSTEMS AND SPECIAL WASTES:			
(a) Installation -			
(1) Size	1		D, E_1
(2) Location	1		D
(3) Separate discharge vent	1		D
(4) Length	1		D, E_1
(5) Pressure Connections	1		D
(6) Discharge	1		D
(7) Height	1		D, E_1
(8) Workmanship	1, 2		D, F, G
7. INSTALL PLUMBING FIXTURES:			
(a) Installation -			
(1) Location	1		D
(2) Connections	1		D
(3) Access	1		D
(4) Joints and water tightness	1, 2		D, E

IN-PLANT INSPECTION CHECKLIST (CONTINUED) PAGE __ OF __

STATION NAME: PLUMBING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(5) Securing	1, 2		D
(6) Setting	1		D
(7) Support	1		D
(8) Cross connection	1		D
(9) Workmanship	1, 2		D, F, G
(10) Testing	2		D, E
8. INSTALL WATER DISTRIBUTION SYSTEM:			
(a) Installation -			
(1) Length	1		D, E_1
(2) Support	1, 2		D
(3) Location	1		D
(4) Connections	1		D
(5) Reaming	1, 2		D
(6) Fittings and Connections	1, 2		D
(7) Valves			
- Pressure	1		D
- Pressure Relief	1		D
(8) Testing	2		D, E

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: PLUMBING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(9) Workmanship	2		D
9. INSTALL FUEL GAS PIPING:			
(a) Installation -			
(1) Location	1		D
(2) Length	1		D, E_1
(3) Support	1, 2		D
(4) Connectors	1		D
(5) Testing	2		D, E
(6) Workmanship	2		D
10. INSTALL WATER HEATER AND VENTS:			
(a) Installation -			
(1) Location	1		D
(2) Enclosures	1		D
(3) Combustion Air	1		D
(4) Controls - location	1		D
(5) Clearances	1, 2		D, E_1

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE ___ OF ___

STATION NAME: PLUMBING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(6) Protection	1		D
(7) Access	1		D
(8) Venting			
- Location	1		D
- Height	1		D, E_1
- Openings	1		D
- Connectors	1		D
- Support	1, 2		D
- Length, Pitch, Clearances	1		D
- Termination	1		D
- Draft Hood	1		D
(9) Workmanship	1, 2		D, F, G

IN-PLANT INSPECTION CHECKLIST

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MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: ELECTRICAL STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS:			
(a) Service Equipment			
(1) Service Enclosure			
- Type	1		A, B, D
- Size	1		A, B, D, E_1
- Capacity & Rating	1		A, B, D
- Switches & Breakers			
— Main Switch & Breaker rating	1		A, B, D
— Sub-switches & Breakers - rating	1		A, B, D
- Condition	2		D, F, G
(2) Service Entrance			
- Conduit: overhead & underground			
— Identification	1		A, B, D
— Type	1		B, D
— Size	1		B, D, E_1
- Conductors			

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: ELECTRICAL STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
— Type and Insulation	1, 2		A, B, D
— Size	1		B, D, E_4
- Condition	2		D, F, G
(3) Grounding			
- Grounding conductor	1		A, B, D, E_4
- Ground clamp	1		A, B, D
- Bonding jumper size	1		A, B, D, E_4
(4) Electrical Gutter			
- Type	1		A, B, D
- Size	1		B, D, E_1
- Fittings & Couplings	1, 9		D
- Bonding Jumper Size	1		D, E_4
- Grounding Conductor	1		A, B, D, E_4
(5) Service Disconnects			
- Type	1		A, B
- Size & Rating	1		A, B
- Switch & Breaker	1		A, B
- Fittings, Couplings & Locknuts	1, 9		D, F
- Grounding Conductor	1		A, B, D, E_4

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: ELECTRICAL STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(b) Distribution Panel & Load Center			
(1) Panel Board			
- Type	1		A, B
- Size	1		D
- Capacity & Rating	1, 15		A, B, D
- Circuit Breakers & Fuses	1		A, B, D
- Separate grounding conductor			
— Type	1		A, B, D
— Size	1		B, D
- Condition	2		D, F, G
(c) Feeder Circuits			
(1) Type			
- Cable	1		A, B, D
- Individual conductors	1		B, D
(2) Size			
- Cable	1		B, D, E_1
- Individual conductors	1		B, D, E_1

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: ELECTRICAL STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(3) Raceways			
- Type	1		A, B, D
- Size	1		B, D, E_1
- Connectors	1, 9		D
(d) Branch Circuits			
(1) Type			
- Cable	1		A, B, D
- Individual conductors	1		B, D
(2) Size			
- Cable	1		B, D, E_1
- Individual conductors	1		B, D, E_4
(3) Raceways			
- Type	1		D
- Size	1		D, E_1
- Connectors	1, 9		D
(e) Fixed Appliances: Ranges, Water Heaters, etc.			
(1) Make & Model			
- Marking & nameplate	1, 10		A, B, D
- Marking of elements	1, 10		B, D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: ELECTRICAL STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(f) Outlet Boxes, Switches, Junction Boxes, Fittings, etc.			
(1) Identification			
- Label & marking	1, 9		D
(2) Metallic, Non-metallic			
- Type	1, 9		D
- Size	1		D
- Use - wet location - dry	1		D, G
(g) Lighting Fixtures, Lamp-holders & Lamps			
(1) Type	1		A, B, D
(2) Listed & labeling	1		A, B, D
(3) Fixture studs	1		A, B, D
(4) Outlet boxes	1		A, B, D
(5) Rosettes	1		A, B, D
(6) Condition	2		D, F, G
2. INSTALL ELECTRICAL SERVICE:			
(a) Identification	1, 2		A, B, D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: ELECTRICAL STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(b) Mounting cabinet			
(1) Backing	1		D
(2) Height	1		D, E_1
(3) Location	1		D
(c) Service entrance			
(1) Service conduit	1		A, B
- Connection to meter base	1		D
- Supports	1, 2		D
- Reaming & bushing	1, 2		D
- Height & clearance from roof	2, 11		D, E_1
(2) Service entrance conductors: overhead & underground			
- Identification	1, 2		A, B, D
- Length & driploop	1		D, E_1
- Servicehead location	1, 2, 12		D, E_1
- Connections to bus	1, 2		D
- Connection to neutral bus	1, 2		D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: ELECTRICAL STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(d) Grounding Continuity			
(1) Grounding conductor			
- Connection to bus	1, 2		D
(2) Bonding jumper at service			
- Connection	1, 2		D, F
(e) Gutter at service			
(1) Identification	1, 2		A, B, D
(2) Size and fill	1		B, D, E1
(3) Location	1		D
(4) Mounting	1, 2		D
(5) Service entrance conductors	1, 2		A, B, D
(6) Connection to service entrance conduit			
- Couplings & nipples	1, 13		D
- Bonding & grounding	1, 13		D
- Reaming/bushing	--		D, F
(f) Service Disconnect			
(1) Identification	1, 2		A, B, D
(2) Location	1		D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: ELECTRICAL STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(3) Mounting	1, 2		D
(4) Connections to gutter			
- Coupling & nipples	1, 2		D
- Bonding and grounding	1, 13		D
(5) Meter Base			
- Bonding and grounding	1, 2		D
- Height	1		D, E_1
(g) Workmanship	2		D, F, G
3. INSTALL DISTRIBUTION PANEL AND LOAD CENTER:			
(a) Identification			
(1) Label	1		A, B, D
(b) Mounting			
(1) Location	1		D
(2) Accessibility	1, 2		D
(c) Over current protection			
(1) Circuit breakers and fuses	1, 2		A, B, D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: ELECTRICAL STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(d) Grounding and bonding			
(1) To main service	1, 2		D
(2) Connections	1, 2		D
(e) Workmanship	2		D, F, G
4. INSTALL FEEDER CIRCUITS:			
(a) Identification	1, 2		D
(b) Drilling, boring-studs/ joists	1, 2, 16		D, E_1, G
(c) Mechanical protection	1, 2, 16		D, G
(d) Mechanical continuity			
(1) Metal raceway	1, 2		D, G
(2) Cable armor	1, 2		D, G
(e) Installation			
(1) Attachment & support	1, 17		D, G
(2) Radius of bend	1, 2		
- Non metallic sheathed cable	1, 18		D, E_1
- Conduit	1, 19		D, E_1
(f) Workmanship	2		D, F, G

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: ELECTRICAL STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
5. INSTALL BRANCH CIRCUITS:			
(a) Identification	1		D
(b) Drilling, boring studs joists	1, 2, 16		D, G
(c) Mechanical protection	1, 2, 16		D, G
(d) Mechanical continuity			
(1) Metal raceway	1		D, G
(2) Cable armor	1		D, G
(e) Installation			
(1) Attachment & support			D
- Type and spacing	1, 17		D, E_1
(2) Radius of bend			
- Non-metallic sheathed cable	1, 18		D, E_1
- Conduit	1, 19		D, E_1
(f) Workmanship	2		D, F, G
6. INSTALL FIXED APPLIANCES: RANGES, WATERHEATERS, ETC.			
(a) Marking			

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: ELECTRICAL STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(1) Nameplate	1, 10		D
(2) Elements	1, 10		D
(b) Supply circuits			
(1) Size of branch circuits	1, 2		D
(2) Identity, branch circuits	1, 2		D
(c) Location			
(1) Spacing	1, 2		D, E_1
(2) Protection from damage	1, 2		D, G
(d) Grounding	1, 2		D
(e) Over current protection			
(1) Circuit breakers	1, 2		D
(2) Controllers and disconnects	1, 2		D
(f) Workmanship	2		D, F, G
7. INSTALL OUTLET, SWITCH AND JUNCTION BOXES AND FITTINGS:			
(a) Identification			
(1) Label and marking	1, 2		A, B, D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

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STATION NAME: ELECTRICAL STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(b) Mounting and Installations			
(1) Supports	1, 20		D
(2) Flush mounting	1, 2, 21		D
(3) Unused openings	1, 2, 22		D
(c) Size and shape			
(1) Depth and dimensions	1		D, E_1
(2) Fill and area	1		D, E_1
(d) Covers and Canopies	1, 2		D
(e) Conductors			
(1) Entering of boxes	1, 2		F
(2) Securing to boxes, terminals and switches	1, 2		D, F
(3) Bushings	1		D, F
(f) Accessibility	1, 23		D
(g) Grounding, bonding and insulation from supports	1, 2		D, F
(h) Workmanship	2		D, F, G
8. LIGHTING FIXTURES, LAMPHOLDERS, LAMPS, ROSETTES, OUTLET BOXES:			
(a) Identification	1, 2		A, B, D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: ELECTRICAL STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(b) Installation	1, 2		D
(1) Location & Mounting	1, 2		D
(2) Shades, guards	1, 2		D
(3) Clearances	1, 2		D, E_1
(4) Supports	1, 2		D
(5) Conductors - movable part	1, 2		D
(6) Protection-conductors	1, 2		D, G
(7) Connections, splices, tops	1, 2		D
(8) Wet Locations	1, 2		D
(9) Height and mounting	1, 2		D, E_1, G
(10) Grounding and bonding Ground	1, 2		D
(11) Ground fault circuit protection	1, 2		D
(12) Fire detection equipment	1, 2		D
9. TESTING OF SYSTEM:			
(1) Continuity Test	2		E_5, F
(2) Dielectric test	2		E_6, F
(3) Functional test of fixtures & appliances	2		D, F

IN-PLANT INSPECTION CHECKLIST

PAGE __ OF __

MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: MECHANICAL (HVAC) STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS:			
(a) Heating Equipment, furnaces, room heaters, etc.			
(1) Type	1		A, B, D
(2) Rating	1		A, B, D
(3) Ducts: metallic, non-metallic	1		D
- Size	1		D, E_1
- Label	1		A, B
- Connectors	1		A, B, D
(4) Vents			
- Size	1		D, E_1
- Type	1		D
- Material	1		D
(5) Condition	2		D, F, G
(b) Ventilation systems			
(1) Ducts, hoods			
- Size	1		D
- Type	1		D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: MECHANICAL (HVAC) STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
- Material	1		D
- Label	1		A, B, D
(2) Condition	2		D, F, G
(c) Air Conditioning Equipment			
(1) Type	1		A, B, D
(2) Label and nameplate	1		A, B, D
(3) Rating	1		A, B, D
(4) Ducts			
- Size	1		D
- Non-metallic	1		A, B, D
- Connectors	1		A, B, D
(5) Condition	2		D, F, G
(d) Miscellaneous heat producing appliances - ranges, dryers, etc.			
(1) Type	1		A, B, D
(2) Label and nameplate	1		A, B, D
(3) Rating	1		A, B, D
(4) Condition	2		D, F, G

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: MECHANICAL (HVAC) STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
2. INSTALL WARM AIR FURNACES:			
(a) Identification			
(1) Label and nameplate	1		A, B, D
(2) Rating	1		A, B, D
(3) Type of fuel/controls	1		A, B, D
(b) Installation			
(1) Location	1		D, E_1, F
(2) Clearance from combustibles	1, 2		D, E_1, G
(3) Shut-off valve/ location	1, 2		D
(4) Electrical connectors	1, 2		D
(5) Access	1, 2		D
(c) Circulating Air supply			
(1) Source	1		D
(2) Ducts	1		D
(3) Separation	1, 2		D
(4) Air requirements	1, 2		D
(5) Return air	1, 2		D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: MECHANICAL (HVAC) STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(d) Conditioned air supply			
(1) Ducts and connectors	1		D
- Size	1		D, E_1
- Location	1		D
- Registers and grills	1, 2		D
(e) Combustion air			
(1) Air supply	1		D
(2) Space	1		D, E_1
(3) Location of air openings	1, 2		D
(4) Outside supply/interior	1, 2		D, E_1
(5) Under floor supply	1		D, E_1
(6) Ducts/connectors	1, 2		D
(f) Workmanship	2		D, F, G
3. VENTS/CHIMNEYS:			
(a) Identification	1, 2		D
(b) Type - System	1		D
(c) Size/area	1		D, E_1
(d) Location/support	1, 2		D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: MECHANICAL (HVAC) STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(e) Length/pitch/clearance	1, 2		D, E$_1$
(f) Termination	1, 2		D
(g) Connectors	1, 2		D
(h) Unused openings	1, 2		D
(i) Workmanship	2		D, F, G
4. DUCTS:			
(a) Identification	1, 2		D
(b) Fastening/support	1, 2		D
(c) Location	1		D
(d) Plenum			
(1) Material	1		D
(2) Location	1		D
(3) Access	1, 2		D
(4) Support	1, 2		D
(e) Workmanship	2		D, F, G
5. INSTALL FLOOR FURNACES, ROOM HEATERS, ETC.:			

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: MECHANICAL (HVAC) STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(a) Identification/label/listing	1, 2		A, B, D
(b) Type/system	1		A, B
(c) Location/Access	1		D, E_1
(d) Combustion air supply	1, 2		D
(e) Grilles/Registers			
(1) Location	1		D
(f) Support	1, 2		D
(g) Protection from damage	1, 2		D
(h) Controls-manual/auto	1		D, F
(i) Electrical connectors	1, 2		D
(j) Workmanship	2		D, F, G
6. INSTALL VENTILATION SYSTEM:			
(a) Ducts			
(1) Size	1		D, E_1
(2) Capacity	1		D
(3) Dampers	1		D
(4) Location	1		D
(5) Separation	1, 2		D, F
(6) Clearance from combustible	1, 2		D, E_1

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: MECHANICAL (HVAC) STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(7) Tightness	1, 2		D, G
(8) Support	1, 2		D
(9) Cleanouts	1		D
(10) Exhaust outlets			
- Termination	1, 2		D
- Clearance above roofs	1, 2		D, E_1
(b) Hoods			
(1) Material	1		D
(2) Fastening/support	1, 2		D
(3) Size/location	1		D, E_1
(4) Clearance	1, 2		D, E_1
(c) Workmanship	2		D, F, G
7. INSTALL AIR CONDITIONING EQUIPMENT:			
(a) Identification			
(1) Label/nameplate	1		A, B, D
(2) Rating	1		A, B, D
(b) Location	1		D
(c) Support	1, 2		D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: MECHANICAL (HVAC) STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(d) Access	1, 2		D, F, G
(e) Circulating Air Supply			
(1) Source	1		D
(2) Duct system	1		D
(3) Separation	1		D
(4) Clearances	1, 2		D
(5) Screens	1		D
(f) Return air limitation	1, 2		D
(g) Workmanship	2		D, F, G
8. INSTALL MISCELLANEOUS HEAT PRODUCING APPLIANCES, RANGES DRYERS:			
(a) Identification			
(1) Label/nameplate	1		A, B, D
(2) Rating	1		A, B, D
(b) Location	1		D
(c) Clearances	1, 2		D, E_1, F
(d) Ducts			
(1) Fastening	1, 2		D
(2) Fire resistant enclosure	1, 2		D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: MECHANICAL (HVAC) STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(3) Connection/fastenings	1, 2		D
(4) Termination/exhaust	1, 2		D, F, G
(e) Workmanship	2		D, F, G
9. TESTING OF MECHANICAL MERCHANDISE:			

IN-PLANT INSPECTION CHECKLIST

PAGE __ OF __

MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: CEILING INSULATION STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS: Moisture barrier, thermal insulation			
(a) Size (e.g., thickness, weight)	1		B, D
(b) Type/Grade	1		B, D
(c) Condition (e.g., dry, undamaged)	2		D, F, G
2. INSTALLATION:			
(a) Moisture Barrier			
(1) Placement (e.g., continuity)	1, 2		D
(2) Attachment	1, 2		D
(b) Thermal Insulation			
(1) Placement	1, 2		D, F_1
(2) Attachment (method of fastening, location and spacing)	1, 2		D, E_1

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: CEILING INSULATION STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(3) Workmanship	2		D, F, G

IN-PLANT INSPECTION CHECKLIST

PAGE __ OF __

MANUFACTURER: _____
INSPECTION AGENCY: _____
STATION NAME: MISCELLANEOUS COMPONENTS (WINDOW, EXIT DOOR, AND ~~STAIRWAY) INSTALLATION STATION~~
MODEL (S): _____

APPLICATION NO: _____
PLANT LOCATION: _____
STATE: _____
STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS:			
(a) Doors and Windows			
(1) Size	1		B, D, E_1
(2) Type and Grade	1		A, B, D
(3) Hardware	1		D, G
(4) Weather Stripping and flashing	1		D, G
(5) Glass - Type/Thickness	1		D, G
(6) Condition	2		D, F, G
(b) Stairways			
(1) Size	1, 2, 7		D, E_1
(2) Material Type & Grade	1		A, B, D
(3) Condition	2		D, F, G
2. INSTALLATION:			
(a) Doors and Windows			

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: MISCELLANEOUS COMPONENTS (WINDOW, EXIT DOOR AND STAIRWAY) INSTALLATION STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(1) Location	1		D, E_1
(2) Weather Stripping/ Flashing	1, 2		D
(3) Hardware	1, 2		D, G
(4) Workmanship	2		D, F, G
(b) Stairways			
(1) Layout (e.g., clear width, headroom)	1, 2, 7		D, E_1
(2) Bearing w/r Structural Members	1, 2		D, G
(3) Handrails and Guardrails	1, 2, 8		D, E_1
(4) Workmanship	2		D, F, G

IN-PLANT INSPECTION CHECKLIST

PAGE__ OF __

MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: WALL SHEATHING STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS: Plywood, fiberboard, proprietary sheathing types			
(a) Size (e.g., thickness)	1		B, D, E_1
(b) Type/Grade	1		A, B, D
(c) Condition/Tolerances	2, 5		D, E_3, G
2. FASTENERS:			
(a) Nails, Staples			
(1) Size	1, 2		B, D, E_1
(2) Type/Grade	1, 2, 6		B, D
(3) Condition	2		D, F, G
(b) Adhesives			
(1) Type	1, 2		B, D
(2) Age, Shelf Life	2		B, D
(3) Mixing Schedule	2		B, D
(4) Coupon Tests	2		D, H

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE ___ OF ___

STATION NAME: WALL SHEATHING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
3. INSTALLATION:			
(a) Measuring and Cutting	1		D, F_1
(b) Layout			
(1) Locations	1		D, F
(2) Coverage	1		D, F
(c) Nails, Staples			
(1) Number	1		D
(2) Location and Spacing	1		D, E_1
(3) Workmanship	2		D, F, G
(d) Adhesives			
(1) Application	1, 2		D
(2) Pressure	1, 2		D
(3) Temperature-or special handling conditions	1, 2		D
(4) Curing (drying time before next operation)	1, 2		D D
(5) Workmanship	2		D, F, G

IN-PLANT INSPECTION CHECKLIST

PAGE __ OF __

MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: EXTERIOR SIDING STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS:			
(a) Exterior wall siding			
(1) Size	1		B, D, E_1
(2) Type/Grade	1		A, B, D
(3) Condition	2		D, F, G
(b) Weather Flashing			
(1) Material	1		B, D
(2) Type/Size	1		B, D, E_1
(3) Condition	2		D, F, G
(c) Caulking Compounds/Mastics			
(1) Type/Grade	1		B, D
(2) Condition	2		D, F, G
2. FASTENERS:			
(a) Nails, Staples			
(1) Size	1, 2		B, D, E_1
(2) Type/Grade	1, 2, 6		B, D
(3) Condition	2		D, F, G

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF ___

STATION NAME: EXTERIOR SIDING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(b) Adhesives			
(1) Type	1, 2		B, D
(2) Age, Shelf Life	2		B, D
(3) Mixing Schedule	2		B, D
(4) Coupon Tests	2		D, H
3. INSTALLATION:			
(a) Flashing	1, 2		D, G
(b) Layout	1		D, F
(c) Weather Tightness	1, 2		D, G
(d) Nails, Staples			
(1) Number	1		D
(2) Location and Spacing	1		D, E_1
(3) Penetration	1, 2		D, F
(4) Workmanship	2		D, F, G
(e) Adhesives			
(1) Application	1, 2		D
(2) Pressure	1, 2		D
(3) Temperature - or special handling conditions	1, 2		D

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: EXTERIOR SIDING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(4) Curing (drying time before next operation)	1, 2		D
(5) Workmanship	2		D, F, G
(f) Caulking Application	1, 2		D, G
(g) Corner Treatment	1, 2		D, G
(h) Painting/Finishing	1, 2		D, G

IN-PLANT INSPECTION CHECKLIST

PAGE __ OF __

MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: ROOF SHEATHING STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS: Plywood, proprietary sheathing types			
(a) Size (e.g., thickness)	1		B, D, E_1
(b) Type/Grade	1		A, B, D
(c) Condition/Tolerances	2, 5		D, E_3, G
2. FASTENERS:			
(a) Nails, Staples, Plyclips			
(1) Size	1, 2		B, D, E_1
(2) Type/Grade	1, 2, 6		B, D
(3) Condition	2		D, F, G
(b) Adhesives			
(1) Type	1, 2		B, D
(2) Age, Shelf Life	2		B, D
(3) Mixing Schedule	2		B, D
(4) Coupon Tests	2		D, H

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: ROOF SHEATHING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
3. INSTALLATION:			
(a) Measuring and Cutting	1		D, E_1
(b) Layout			
(1) Blocking/Plyclips	1, 2		D, F
(c) Nails, Staples			
(1) Number	1		D
(2) Location and Spacing	1		D, E_1
(3) Penetration	1, 2		D, F
(4) Workmanship	2		D, F, G
(d) Adhesives			
(1) Application	1, 2		D
(2) Pressure	1, 2		D
(3) Temperature - or special handling conditions	1, 2		D
(4) Curing (drying time before next operation)	1, 2		D
(5) Workmanship	2		D, F, G
(e) Methods			
(1) Face grain orientation with respect to rafters	2		D, E_1

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE __ OF __

STATION NAME: ROOF SHEATHING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
(2) Joints centered over rafters	2		D, E_1
(3) Workmanship	2		D, F, G

IN-PLANT INSPECTION CHECKLIST

PAGE __ OF __

MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: FINISH ROOFING STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. MATERIALS:			
(a) Underlayment			
(1) Type/Grade	1		A, B, D
(2) Weight, Thickness	1		B, D
(3) Condition	2		D, F, G
(b) Roofing			
(1) Type/Grade	1		A, B, D
(2) Weight	1		B, D
(3) Condition	2		D, F, G
(c) Weather Flashing			
(1) Material	1		B, D
(2) Type/Size/Weight	1		B, D, E
(3) Condition	2		D, F, G
(d) Nails			
(1) Size	1, 2		B, D, E
(2) Type/Grade	1, 2, 6		B, D
(3) Condition	2		D, F, G

IN-PLANT INSPECTION CHECKLIST (CONTINUED)

PAGE__ OF___

STATION NAME: FINISH ROOFING STATION STATION NO.:

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
2. INSTALLATION:			
(a) Underlayment	1, 2		D, G
(b) Flashing	1, 2		D, G
(c) Layout	1		D, F
(d) Nails			
(1) Number	1		D
(2) Location and Spacing	1		D, E_1
(3) Penetration	1, 2		D, F
(e) Exposure	1		D, E_1
(f) Workmanship	2		D, F, G

IN-PLANT INSPECTION CHECKLIST

PAGE__ OF __

MANUFACTURER: _____ APPLICATION NO: _____
INSPECTION AGENCY: _____ PLANT LOCATION: _____
STATION NAME: FINAL COMPLIANCE INSPECTION AND CERTIFICATION STATION STATE: _____
MODEL (S): _____ STATION NO.: _____
SYSTEM APPROVAL NO(S).: _____

ESSENTIAL CHARACTERISTICS OF INSPECTION	SOURCES OF DESIGN INTENT	ACTUAL DESIGN REQUIREMENT	DETERMINATION OF COMPLIANCE
1. COMPLIANCE REVIEW:	2		D, F, G
2. LABEL:			
(a) Contents	2		D
(b) Location	1, 2		D
(c) Attachment (method of fastening)	1, 2		D
3. LABEL CONTROL RECORD:	2		D
4. MANUFACTURER'S DATA PLATE:			
(a) Contents	2		D
(b) Location	1, 2		D
(c) Attachment (method of fastening)	1, 2		D

Notes to the Inspection Checklists
Sources of Design Intent - References

1. Approved Building System (i.e., drawings and specifications).

2. Manufacturer's Approved Compliance Assurance Manual.

3. Standard Grading Rules for Western Lumber (1970), Western Wood Products Association, Section 752.

4. One and Two Family Dwelling Code, 1971 Edition, Section R-602.6 and R-402.4.

5. Plywood Product Standard Handbook (1970), American Plywood Association, Sections 3.9, 3.10, 3.11 and 3.12.

6. Federal Specification FF-N-105B (March 17, 1971).

7. One and Two Family Dwelling Code, 1971 Edition, Section R-214.

8. One and Two Family Dwelling Code, 1971 Edition, Section R-215.

9. Underwriters Laboratories Construction Materials List.

10. Underwriters Laboratories Appliance Utilization List.

11. National Electric Code (NEC) (1971), Section 230-24.

12. NEC, (1971), Section 230-51.

13. NEC, (1971), Section 250-72.

14. NEC, (1971), Section 230-71.

15. NEC, (1971), Section 384-13.

16. NEC, (1971), Section 300-8.

17. NEC, (1971), Section 336-5.
(Non-metallic sheathed cable), No. 348-12 (Electrical metallic tubing) or other sections as applicable for other types of circuits or conductors.

18. NEC, (1971), Section 336-10.

19. NEC, (1971), Section 348-9 for electrical metallic tubing and other sections as applicable.

20. NEC, (1971), Section 370-13.

21. NEC, (1971), Section 370-10.

22. NEC, (1971), Section 370-8.

23. NEC, (1971), Section 370-19.

Determination of Compliance

A - Listing Agency Label

B - Manufacturer's Label

C - Test Reports

D - Visual Inspection

E - Physical Measurement or Test (in accordance with the following technique, as appropriate)

E_1 - Measurement with pocket tape or scale.

E_2 - Measurement of lumber moisture content - Electrical resistance type moisture meter.

E_3 - Measurement of plywood moisture content - Oven, scales, thermometer, timepiece, core saw.

E_4 - Measurement with a wire gage.

E_5 - Measurement with a continuity tester.

E_6 - Measurement with a megometer or equivalent dielectric testing equipment.

F - Inspector Knowledge

G - Inspector Judgement

H - Sampling by Inspector, as necessary.

INSPECTION REPORT

The suggested Inspection Report form is for use by the Inspection Agency inspector to report in summary form the results of his audit inspections of a manufacturer. Copies of the Inspection Report should be made available to the manufacturer and, as appropriate, the Administrative Agency. All Noncompliance Tags (CES Document No. C-04) and Prohibited Sales Notices (CES Document No. C-05) issued should be summarized by unit serial number on the Inspection Report. The frequency of occurrence for each defect should be so indicated in the column marked "Frequency" for each individual entry. Each individual report should be signed at the bottom by both the Inspection Agency inspector and the manufacturer's compliance control representative.

[*Name and address of Inspection Agency*]

INSPECTION REPORT

NAME OF MANUFACTURER: _____

PLANT LOCATION: _____

DATE OF REPORT: _____ REPORT NO: _____

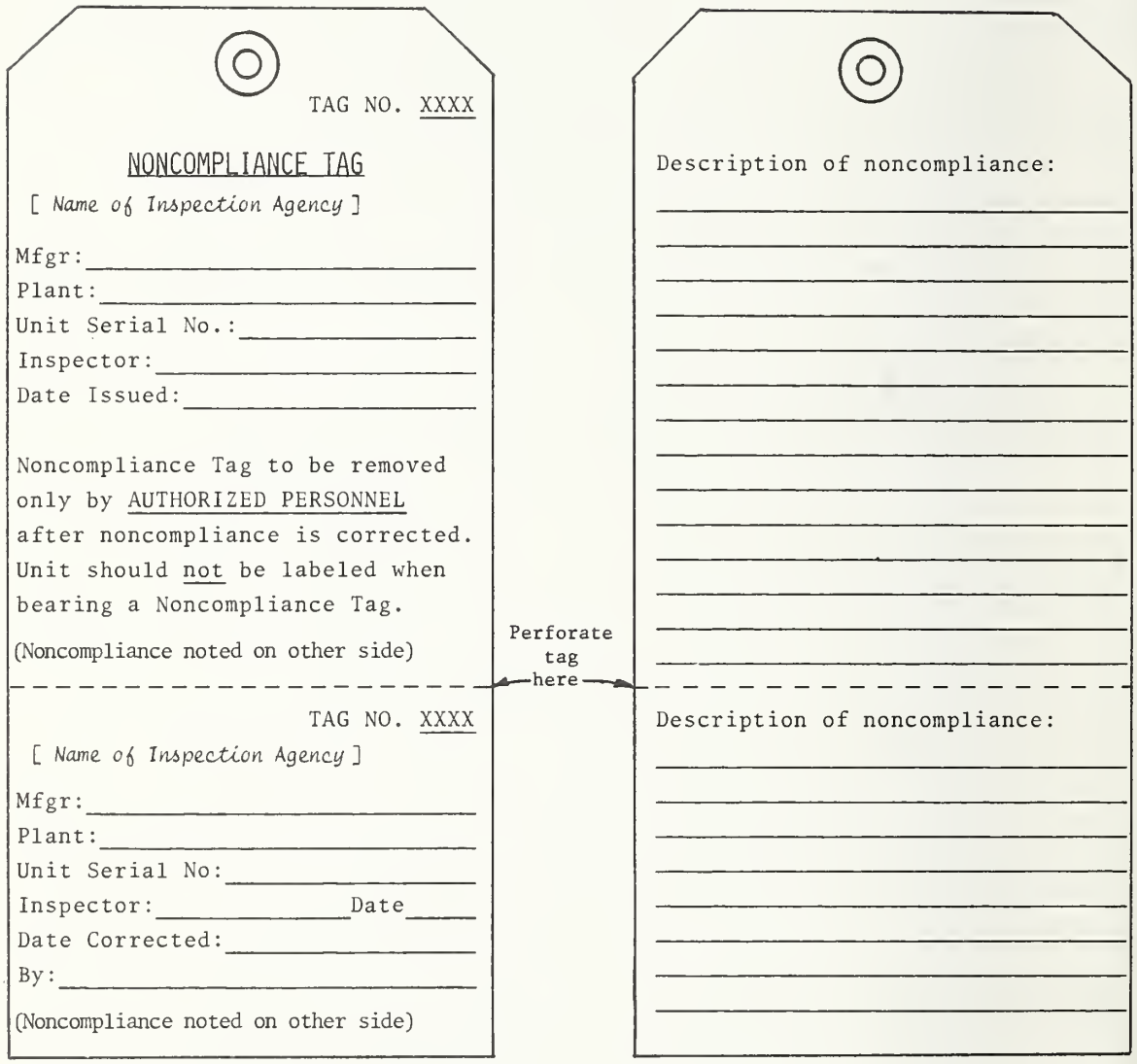
Unit Serial No.	Noncompliance Tag No.	Description of Defect	Frequency

Agency Inspector (Signature) _____ Mfgr. Inspector (Signature) _____ Page ____ of ____

NONCOMPLIANCE TAG

Deficiencies in construction found by the Inspection Agency inspector that can not be corrected immediately in his presence should be tagged with a Noncompliance Tag (red tag). It is suggested that the tag be pre-printed on both sides on heavy red paper stock material and be attached by a string in the area of the noncompliance; yet the tag should be prominently visible. The tags are individually serialized for reference and control purposes. The inspector fills out the tag noting the deficiency on both the portion of the tag attached to the unit and the detachable end which he keeps. A red tag may be attached to individual deficiencies or may apply to several deficiencies depending on the items involved and the judgement of the inspector. Only the Inspection Agency inspector or authorized manufacturer personnel should remove Noncompliance Tags. Completed tags should show the action taken to correct deficiencies and should be retained as part of the compliance assurance records. Units of construction should not be labeled when bearing a Noncompliance Tag. The status of Noncompliance Tags issued should be summarized on the Inspection Report, CES Document No. C-03.

The manufacturer may also utilize Noncompliance Tags or may use some other device, such as production travellers to identify construction deficiencies.



Front of Tag

Back of Tag

PROHIBITED SALES NOTICE

For the more serious unit violations which affect public health and safety and which can not be readily repaired as provided by a Noncompliance Tag, a Prohibited Sales Notice should be applied to the individual unit of production until such time as corrective measures have been implemented by the manufacturer. The Prohibited Sales Notice should be an official state notice with reference to appropriate laws and rules and regulations of the state. It should be affixed when noncompliances would result in a hazard to health and safety and where major repair or rework is required by the manufacturer to bring the completed unit into code compliance. The notices should be on adhesive backed paper and should each be individually serialized and controlled by the Inspection Agency. Only Inspection Agency or Administrative Agency personnel should be authorized to remove a Prohibited Sales Notice.

Like the Noncompliance Tag, the Prohibited Sales Notice should be referenced on the Inspection Report, CES Document No. C-03.

PROHIBITED

SALE - INSTALLATION - OCCUPANCY

NOTICE IS HEREBY GIVEN THAT THE SALE, OFFERING FOR SALE, INSTALLATION OR OCCUPANCY OF THIS STRUCTURE IN [*Name of State*] IS PROHIBITED.

(Identify enabling legislation and regulations of state)

THE *(Name of Appropriate Agency)* SHALL BE NOTIFIED PRIOR TO MOVING THIS STRUCTURE OR UPON CORRECTION OF THE LISTED DEFICIENCIES

WARNING THE REMOVAL, DESTRUCTION OR CONCEALMENT OF THIS NOTICE BY ANY UNAUTHORIZED PERSON IS UNLAWFUL.

STATE OF _____

[*Name, address and telephone no. of appropriate agency*]

REFERENCE - IDENTIFY INSPECTION REPORT DESCRIBING DEFICIENCIES _____

DATE NOTICE POSTED _____ BY AGENCY INSPECTOR _____

MFGR. NAME _____ UNIT SERIAL NO. _____ SERIAL NO. OF THIS NOTICE _____

NOTIFICATION OF SUSPENDED ACTIVITIES

If a manufacturer is repeatedly conducting operations in direct violation with the Act or the Rules and Regulations, then an official Notification of Suspended Activities as suggested by this document should be issued. This document, which is a form letter, may be issued by the Administrative Agency, the Evaluation Agency or the Inspection Agency, in accordance with Part IV, Section 3(C) of the Model Rules and Regulations.

The suggested letter form requires the initiating agency to cite the applicable manufacturer violations and to direct the party at fault to surrender any certification labels in their possession to the issuing agency.

When the manufacturer has taken corrective action to remedy the condition which led to the suspension, the manufacturer should so notify the Administrative Agency in writing. At that time the conditions of the violation and the remedy proposed should be reassessed. If all conditions are satisfactory to the Administrative Agency, the suspension should be lifted and Inspection Agency monitoring reinstated at the 100% level.

The same type of form letter notification could be utilized to suspend or revoke the approval of Evaluation or Inspection Agencies as provided for by Part IV, Section 3 of the Model Rules and Regulations.

STATE OF _____

[*Name and address of Administrative Agency, Evaluation Agency, or Inspection Agency*]

Date: _____

TO: *(Name and Address of Manufacturer)*

SUBJECT: Notification of Suspended Activities

As prescribed in *(Part IV, Section 3(C), "Suspension and Revocation" - Certification)* of the Model Rules and Regulations for the Manufactured Building Act, any manufacturer who violates or fails to comply with the Act and the Rules and Regulations shall be notified in writing describing the reasons for suspension or revocation along with the specific violations and to instruct the manufacturer to deliver all labels in their possession, or under their control, to the issuing agency.

SPECIFIC VIOLATIONS: _____

INSTRUCTIONS FOR RETURNING LABELS TO ISSUING AGENCY: _____

I hereby certify that the violations noted on this form are true and correct.

_____
(Signature and Title)

cc: Appropriate Administrative, Evaluation, Inspection or Local Enforcement Agencies involved

Administrative Agency in states having granted reciprocity

LABEL

The suggested label shown on page 2 of this document contains the information and wording as required in Part IV, Section 3(B) of the Model Rules and Regulations. However, this wording does appear to imply a liability by the Inspection Agency which is not otherwise implied by the Rules and Regulations. Accordingly, it is recommended that the question of liability be investigated with regard to any particular state program before the wording of the label is adopted in that specific state.

The label should be made of a material which can be permanently imprinted or embossed with the necessary information and which cannot be removed after being attached to the unit of construction without being destroyed.

Labels should only be attached to manufactured buildings or building components which comply with all applicable codes, standards, and Rules and Regulations. Attachment of labels should be done by the Inspection Agency, or, if delegated in accordance with the Rules and Regulations, by the manufacturer's employees charged with controlling the use of labels. Records of label usage should be maintained as suggested in the Label Control Record (CES Document No. C-08). Reference is also made to CES Document S-09, pages 7 and 25 "Compliance Records" and "Final Inspection and Certification" in which record keeping and final inspections are discussed.

At the discretion of the Administrative Agency [Part IV, Section 3(B)(1)], labels may be limited in size and content for building components whose size or shape do not permit the full information to be placed thereon. In such cases, the alternate label must be approved by the Administrative Agency. For high production components, alternate labeling methods may be approved, such as simple markings or identifications stamped, etched, embossed, or otherwise permanently affixed to the component during, or as part of the fabrication process.

STATE OF _____
DEPARTMENT OF _____

This label certifies that this building [or building component] has been manufactured in accordance with an approved building system and compliance assurance program approved by *(Name of Evaluation Agency)* and inspected by *(Name of Inspection Agency)* under the auspices and approval of *(Name of State)*

LABEL SERIAL NO: _____
MANUFACTURER'S SERIAL NO: _____
APPROVAL NUMBERS ☐ BUILDING SYSTEM: _____
☐ COMPLIANCE ASSURANCE PROGRAM: _____
SEE DATA PLATE LOCATED ON: _____
AGENCY ISSUING THIS LABEL: _____

LABEL CONTROL RECORD

This document suggests a means of formally controlling the usage of certification labels. Control over issuance of labels is required by Part IV, Section 3(B)(2) of the Model Rules and Regulations and permanent records of the handling of labels is required by Part IV, Section 3(B)(3).

The suggested form provides a record of label usage and direct traceability between the manufacturer's production unit serial number and the label serial number as well as the date the label was affixed (Date of Manufacture). Other information required is the destination of the individual unit, the building system approval number, and name of the labeling person.

As each page of the form is completed, it should be signed and dated by the respective manufacturer and Inspection Agency inspection personnel. The original copy of the form should be retained in the compliance assurance record of the Inspection Agency; duplicate copies should also be provided to the manufacturer and to the Administrative Agency for record keeping purposes.

Subject to approval by the Administrative Agency, for small high production manufactured building components which do not require to carry the full label with a label serial number, the Label Control Records may be based on lot or batch numbers.

Name and address of Inspection Agency

LABEL CONTROL RECORD

NAME OF MANUFACTURER: _____

PLANT LOCATION: _____

Manufacturer's Serial No.	Label Serial No.	Date of Mfg.	Destination	Building System Approval No.	Labeled by (Name)

Agency Inspector (Signature & Date) _____ Mfgr. Inspector (Signature & Date) _____ Page ____ of ____

5.7. Local Enforcement Agency Activities

Local enforcement agency activities in regard to certified manufactured buildings and building components are given in Part IV, Section 5 of the Rules and Regulations. In general, these activities are: (1) issuance of building permits; (2) on-site inspections during construction; (3) issuance of certificates of occupancy; and, (4) reporting violations, if any, to the Administrative Agency. Applications for building permits, certificates of occupancy, and the reporting of violations by the local enforcement agency are discussed in the following sections.

a. Building Permit Application

According to Part IV, Section 5(A) of the Rules and Regulations, a manufacturer or builder applying for a local building permit may have to furnish the following information in addition to any other local requirements:

(1) A statement that work to be performed under such permit is to include the installation of a certified manufactured building or building component in accordance with the provisions of the Act;

(2) A true copy of the approved building system (where one has not previously been furnished); and,

(3) A copy of the Building System Approval Report (where one has not previously been furnished).

Presently there are several model building permit application forms which are widely used by both state and city building regulatory agencies. These model forms have been developed by the U. S. Department of Commerce, Bureau of the Census; International Conference of Building Officials (ICBO) [17]; and Building Officials and Code Administrators International (BOCA) [18]; and the Southern Building Code Congress International (SBCC) [19].

Bureau of the Census Form. This building permit application form was developed by the Bureau of the Census with the hope that widespread adoption of the form would make possible compilation of comparable information concerning new construction in local areas, in states, and in the nation. This one-page form along with notes on its use is incorporated into this report as CES Document No. L-01. Since this form does not specifically provide for entries as to whether or not the proposed work includes the installation of a certified manufactured building or building components, it is necessary that such additional information be attached to this building permit application form.

ICBO Form. The ICBO suggested building permit application form serves a three-fold purpose; that is, an application for a permit; and when properly completed and validated, a building permit; and after validation an inspection record [17]. The application form is in five parts; one copy for the inspector, the second for the applicant, third for a temporary file, fourth for the Auditor, and the fifth for the Tax Assessor. The form provides space for the applicant to briefly describe the proposed work, and accordingly such space could be used to indicate that the

application involves the installation of certified manufactured buildings or components. ICBO has also developed similar model application forms for plumbing, electrical and mechanical permits to accompany the building construction permit.

BOCA Form. The BOCA model form consists of four pages and is designated as an Application for Plan Examination and Building Permit [18]. The format and content of the first page is similar to the Bureau of the Census form; the second page provides space for department notes and data; the third page relates to plan review records and additional permits required; and the fourth page provides space for zoning plan examiner reviews and site or plot plan drawings by the applicant.

b. Building Permit

Local enforcement agencies are required to issue building permits for certified manufactured buildings prior to installation and for buildings containing certified building components which in all other respects comply with all applicable building codes [Part IV, Section 5(A)].

As indicated in the previous section, some building permit application forms (e.g., ICBO) are also used as building permits after they are properly completed and validated. BOCA has developed a model six-part multi-purpose building permit form [18]. One part or copy of this form is for office file use, one copy is for field inspection use, one is for certificate of occupancy, one is for owner or applicant, one is for assessors use, and one copy is a job card for posting on-site by the general contractor. The copy used as the certificate of occupancy is not issued until the final inspections have been completed.

c. Local Enforcement Agency Report of Noncompliance

Part IV, Section 5(C) requires that the local enforcement agency inspect all manufactured buildings or building components to determine that the unit as delivered and installed meets the conditions of the building systems approval report and/or the manufacturer's data plate, and Paragraph (F) of the same section requires that the local enforcement agency report to the Administrative Agency any deficiencies or violations found in the conduct of these local inspections.

When a local enforcement agency reports such violations as required, it should use a form similar to the example given in CES Document No. L-02 [20]. A similar form can be used by Inspection Agencies in states which require that such agencies perform on-site installation inspections.

d. Certificates of Occupancy

After certified manufactured buildings or buildings containing certified building components which otherwise comply with all applicable building codes have been properly installed and inspected in accordance with the Act and Rules and Regulations, the local enforcement agencies are required to issue Certificates of Occupancy [Part IV,

Section 5(E)]. ICBO has developed a model Certification of Occupancy and, as discussed previously, BOCA has prepared a multi-purpose Building Permit form which can also be utilized as a Certificate of Occupancy. CES Document No. L-03 was developed as a sample Certificate of Occupancy form which includes the necessary information and wording so as to apply to manufactured buildings as well as to conventionally on-site constructed buildings.

STANDARD PERMIT APPLICATION FORM

The concept of a national uniform building permit application form was originally introduced by the Bureau of the Census, U. S. Department of Commerce, in 1966. The purpose was to provide a document which could be adopted by building permit offices for local use and at the same time contain basic information which would improve data reported to and collected by the Bureau of the Census in its monthly surveys. From the outset, the major building codes organizations have been kept informed of whatever progress has been made and have approved of the idea of a uniform form. Two of them recommended adoption of earlier versions of the form to their members.

The original document was modified by a number of users and the form presented is a "third generation" version. From what reactions thus far received, the contents, with local modifications, are satisfactory for many jurisdictions. However, the form and its contents should not be considered mandatory. The form is a viable document which should and must be modified to meet local requirements and changing data needs. It is not meant to be unchanging and sterile.

It would be self-defeating to recommend a single form for adoption by all jurisdictions - large and small, metropolitan and rural. As presented, the form and its contents should be considered as a core which can be accepted as is, which can be rearranged or which can be implemented as necessary. Some of the items - Type of Sewage Disposal, Type of Water Supply, Type of Roof - may not be applicable in many jurisdictions and there is nothing sacred about retaining them. However, a review will indicate that most of the data listed are basic information items.

If a single uniform application form is not applicable for an entire State, the proposed form can be modified for adoption within a metropolitan area in which most informational requirements among jurisdictions are similar. Adoption would enable a local organization - a State or local university, a regional planning commission, etc. - to keep track of new construction: where and what is going on.

Since the inception of the undertaking in 1966, the Bureau of the Census has volunteered its aid to any State or metropolitan area-wide agency in preparing a modified version of the form which meets its particular requirements. This offer still stands.

NOTE - When required, other information desired by the Local Enforcement Agency such as that suggested in Part IV, Section 5(A) of the Model Rules may be inserted as remarks in Section D-17 of the form or in the space left for nonresidential uses.

(Nome of Permit Issuing Jurisdiction
Nome of Department Issuing Building Permits)

BUILDING PERMIT APPLICATION

IMPORTANT – Complete ALL items. Mark boxes where applicable.

I. LOCATION OF BUILDING

Number and street | Subdivision | Lot | Block | Census tract

N S
E W side of _____; _____ feet E W from intersection of _____
N S

(Other local geographic, political, or legal subdivision identification)

II. TYPE AND COST OF BUILDING – *All applicants complete Parts A – D*

A. TYPE OF IMPROVEMENT

1 ☐ New building
2 ☐ Addition *(If residential, enter number of new housing units added, if any, in Part D, 13)*
3 ☐ Alteration *(See 2 above)*
4 ☐ Repair, replacement
5 ☐ Wrecking *(If multifamily residential, enter number of units in building in Part D, 13)*
6 ☐ Moving (relocation)
7 ☐ Foundation only

B. OWNERSHIP

8 ☐ Private (individual, corporation, nonprofit institution, etc.)
9 ☐ Public (Federal, State, or local government)

D. PROPOSED USE – *For "Wrecking" most recent use*

Residential

12 ☐ One family
13 ☐ Two or more family – *Enter number of units* → _____
14 ☐ Transient hotel, motel, or dormitory – *Enter number of units* → _____
15 ☐ Garage
16 ☐ Carport
17 ☐ Other – *Specify* _____

Nonresidential

18 ☐ Amusement, recreational
19 ☐ Church, other religious
20 ☐ Industrial
21 ☐ Parking garage
22 ☐ Service station, repair garage
23 ☐ Hospital, institutional
24 ☐ Office, bank, professional
25 ☐ Public utility
26 ☐ School, library, other educational
27 ☐ Stores, mercantile
28 ☐ Tanks, towers
29 ☐ Other – *Specify* _____

C. COST

	(Omit cents)
10. Cost of improvement	$
To be installed but not included in the above cost	
a. Electrical	
b. Plumbing	
c. Heating, air conditioning	
d. Other (elevator, etc.)	
11. TOTAL COST OF IMPROVEMENT	$

Nonresidential – Describe in detail proposed use of buildings, e.g., food processing plant, machine shop, laundry building at hospital, elementary school, secondary school, college, parochial school, parking garage for department store, rental office building, office building at industrial plant. If use of existing building is being changed, enter proposed use.

_____
_____
_____

III. SELECTED CHARACTERISTICS OF BUILDING – *For new buildings and additions, complete Parts E – L; for wrecking, complete only Part J, for all others skip to IV.*

E. PRINCIPAL TYPE OF FRAME

30 ☐ Masonry (wall bearing)
31 ☐ Wood frame
32 ☐ Structural steel
33 ☐ Reinforced concrete
34 ☐ Other – *Specify* _____

F. PRINCIPAL TYPE OF HEATING FUEL

35 ☐ Gas
36 ☐ Oil
37 ☐ Electricity
38 ☐ Coal
39 ☐ Other – *Specify* _____

G. TYPE OF SEWAGE DISPOSAL

40 ☐ Public or private company
41 ☐ Individual (septic tank, etc.)

H. TYPE OF WATER SUPPLY

42 ☐ Public or private company
43 ☐ Individual (well, cistern)

I. TYPE OF MECHANICAL

Will there be central air conditioning?
44 ☐ Yes 45 ☐ No

Will there be an elevator?
46 ☐ Yes 47 ☐ No

J. DIMENSIONS

48. Number of stories _____
49. Total square feet of floor area, all floors, based on exterior dimensions _____
50. Total land area, sq. ft. _____

K. NUMBER OF OFF-STREET PARKING SPACES

51. Enclosed _____
52. Outdoors _____

L. RESIDENTIAL BUILDINGS ONLY

53. Number of bedrooms _____
54. Number of bathrooms: Full _____ Partial _____

IV. IDENTIFICATION – *To be completed by all applicants*

	Name	Mailing address – *Number, street, city, and State*	ZIP code	Tel. No.
1. Owner				
2. Contractor				
3. Architect				

The owner of this building and the undersigned agree to conform to all applicable laws of *(nome of permit jurisdiction)*.

Signature of applicant	Address	Application date

DO NOT WRITE IN THIS SPACE – FOR OFFICE USE

Approved by	Permit fee	Date permit issued	Permit number
	$		

Recommended by: U.S. Department of Commerce Bureau of the Census July 1, 1968

MANUFACTURED BUILDING REPORT OF NONCOMPLIANCE

Part 1 of the form is completed by the local enforcement agency when an arriving unit is damaged or a violation is noted. The report should not be used for cosmetic type of damage or where the damage is of a type discussed in the Building System Approval Report. The form provides for the preparer to specify the provisions of the applicable code, standard, or Approval Report violated. It also provides a separate section for reporting damage to the unit. Upon completion, the form is forwarded to the state for follow through (Part IV, Sections 5(A), (C), and (E)).

Part 2 is prepared by the state. When a damaged or noncomplying unit is reported, a determination of repairability must be made. This may involve consultation between the manufacturer, state and/or third party, and the local agency. Upon determining the repairability of a unit, one of two actions is necessary. If the unit is repairable, an assignment of inspection responsibility is made. The state may give the responsibility to the local enforcement agency, the third party agency or choose to perform the necessary inspections with its own personnel. This section also briefly outlines the areas of noncompliance or damage and the means of accomplishing the inspection (i.e., visual examinations or tests). It authorizes destructive disassembly if such is warranted. If the unit is not repairable, then the local agency is authorized to take the necessary procedures to order removal of the unit (Part IV, Section 5 (D)).

Part 3 of the form provides a section for the agency inspecting the repairs to certify that the required repairs have been completed and that the unit is now in compliance.

Use of this form results in a documentable procedure for repair or removal of noncomplying units. It also provides the necessary information to keep the various parties informed of the progress of noncomplying units.

This form is presented as one document. It may also be constructed using Parts 2 and 3 as a separate form since they are not required by the local enforcement agency when preparing Form L-02.

This form may be serialized for ease of record keeping.

STATE OF _____ NO. _____

[Name and Address of Administrative Agency]

MANUFACTURED BUILDING REPORT OF NONCOMPLIANCE

GENERAL INFORMATION

Name of Local Enforcement Agency _____
Address _____
Name of Inspection Agency _____
Address _____
Name of Builder or Owner _____
Address _____
Location of Unit _____

UNIT IDENTIFICATION

Manufacturer _____
Model Designation and Serial No. _____
Unit Label No. _____ Building System Approval No. _____
C.A. Program Approval No. _____ Building Permit No. _____

VIOLATIONS: _____

ACTIONS TAKEN ☐Occupancy Permit Withheld ☐Provisional Occupancy Permit Issued
☐Other _____

(Name of Local Building Official) (Title) (Signature) (Date) **Part 1**

The above designated unit has been determined to be noncomplying in the following respects: _____

and has been determined to be: ___REPAIRABLE (See inspection notes below)
___NONREPAIRABLE (See instructions below)

Inspection to be performed by: ___LOCAL ENFORCEMENT AGENCY
___COMPLIANCE ASSURANCE AGENCY
___STATE INSPECTORS

DISASSEMBLY AS REQUIRED IS ___ PERMITTED TO PERFORM INSPECTIONS AND TESTS.

COMPLIANCE ASSURANCE INSTRUCTIONS AND APPROVED DRAWINGS ARE:

___ENCLOSED REMARKS: _____
___BEING FOREWARDED
___NOT REQUIRED

NOTE: PART 3 OF THIS REPORT MUST BE COMPLETED AND FILED UPON COMPLETION AND ACCEPTANCE OF WORK BY THE ASSIGNED INSPECTION AGENCY.

TO: _____
(Local Enforcement Agency)

YOU ARE HEREBY AUTHORIZED TO TAKE THE PROCEDURES DEEMED NECESSARY BY YOUR OFFICE TO ACCOMPLISH THE REMOVAL OF THE ABOVE DESIGNATED UNIT(S).

Name Title Signature Date **Part 2**

TO: _____
(Administrative Agency)

THE ABOVE DESIGNATED UNIT HAS THE REQUIRED REPAIRS AND/OR CORRECTIONS COMPLETED AND IS NOW IN COMPLIANCE WITH

Name of inspector or preparer Title Signature Date **Part 3**

[*Name and Address of Local Enforcement Agency*]

CERTIFICATE OF OCCUPANCY

No. _____ Date _____

C.O. Appl. No._____ Building Permit No._____ Date issued _____

Location _____

Map No._____ Section_____ Block_____ Lot_____

Proposed Use _____

No. of Stories _____ No. of units_____

☐ This certifies that the building located at premises indicated above complies with all applicable local ordinances.

☐ This certificate is issued pursuant to the requirements of (*Identify enabling state legislation and regulations*) and complies with applicable local ordinances.

Approval Report No._____ Label No._____

This certificate issued to: Name: _____

(Owner, lessee or tenant) Address: _____

_____

(Seal or Stamp) (Signature of Local Enforcement Agency Official)

Any change in the type of occupancy, or part of premises thereof, will render this certificate VOID and a NEW certificate must be obtained.

5.8. Interstate Acceptance (Reciprocity)

a. Introduction

As was mentioned in Section 1, the creation of state wide marketing areas is one of the aims of state regulatory programs for manufactured buildings and components. In order to create even larger marketing areas and to eliminate the duplication of efforts and costs, it is desirable that conditions be developed which permit approved building systems and manufactured buildings and components certified in one state to be accepted in another state without requiring a full re-evaluation, approval, and certification in that state.

Interstate acceptance can be based on reciprocity; that is, the mutual acceptance of systems and units by two or more states from each other; or it can be a one-way acceptance by one state of units produced in one or more other states, without these other states reciprocating. Further, the acceptance can be full, that is, without additional requirements being imposed, or limited, that is, under the condition that certain additional requirements be met. Finally, such acceptance could also be limited in the sense that acceptance could be for the building systems approval only, and not for inspection and certification, or vice-versa.

The preconditions for either reciprocity or for one-sided acceptance are basically similar, although they do differ in the degree of their importance. The processes or procedures to be used to grant reciprocity or unilateral acceptance may differ substantially since the two or more states involved may use regulatory systems based on (1) third-party evaluation and certification; (2) state operations only; or (3) a combination of the two systems. The following paragraphs discuss the preconditions for interstate acceptance and the regulatory processes related to such acceptance.

b. Prerequisite for Interstate Acceptance

Part VII, Sections 1 through 3 of the Rules and Regulations provide a mechanism for acceptance of manufactured buildings and components certified by another state. Basically two factors affect such acceptance:

- The codes and standards (technical requirements) under which the units were certified, and
- The effectiveness of the enforcement process.

Where two state programs require compliance with the same codes, there are no differences in the technical requirements and a basis for reciprocal acceptance of certified units exists. Where two state programs require compliance with differing codes, or with the same but substantially amended codes, the differences in technical requirements could be so substantial as to eliminate any basis for reciprocity. Fortunately, the differences in the technical requirements of the various codes used by most states are usually not substantial, and except for individual requirements (such as for snow and wind loads), such differences as do exist need not prevent

acceptance of certified units. Some specific additional information may need to be provided to permit the accepting state to determine that the unit complies fully with its own codes. Many existing state programs recognize this fact by stating that reciprocity shall be granted if it is determined that the other state "satisfactorily" enforces compliance to codes and standards which "meet the objectives" of its own act and rules and regulations.

The effectiveness of the enforcement process is more apt to differ from one state to another, and is also more difficult to define and evaluate than are the technical requirements. The effectiveness depends on such factors as the qualifications and reliability of the enforcement personnel, management capabilities of the various agencies involved in the regulatory process, and the resources available for the regulatory activity. The development of criteria for the evaluation of the effectiveness of agencies is the objective of NBS Project LEAP (see previous discussion in Section 1). Most existing state programs provide for the acceptance of certified manufactured buildings from a state that has a level of enforcement which is either "similar", "substantial", or "satisfactory", and do not require that the level of enforcement in the other state be "identical" to its own.

Although not identified above as one of the major two factors affecting interstate acceptance of certified units, the documentation used by the states also can have a direct influence on reciprocity. Where such documentation differs substantially, it will be difficult for another state to determine both the compliance of a specific building system to technical requirements and the effectiveness of the enforcement program. Conversely, the use of uniform documentation, particularly uniform checklists, enables the state not only to determine the technical criteria, but also, at least to some degree, the effectiveness of the other state's enforcement activity.

By providing such uniform documentation, Project CES hopes to encourage the interstate acceptance of manufactured buildings and components, and to aid in establishing regional and national marketing areas so that the full potential of industrialized building sector can be realized.

c. Process of Interstate Acceptance

The CES state-of-art study indicates that the majority of states with implemented state manufactured building regulatory programs have some form of statutory or administrative provisions for accepting units approved and certified by other states without re-evaluation and re-inspection. However, such provisions, while incorporated in the adopted legislation and/or in the rules and regulations governing the programs, do not seem to have been implemented. Of the 20 states that reported to have provisions for interstate acceptance (out of a total of 50 studied in mid-1974), only 11 states reported to actually have accepted out-of-state units.

Four different thoughts and principles on interstate acceptance have been proposed by various officials and others engaged in the manufactured building regulatory system:

(1) Where two or more states use the "third-party system", and such states approve the same third-party organizations, reciprocity for accepting in one state units certified by another state is claimed to be almost automatic. However, it has been pointed out that although the third party may be the same private company operating in two or more states, the effectiveness of the organizations in the various states still may differ.

(2) At least in some states legal aspects seem to dictate that the reciprocity be based on the acceptance of another state's program, and not on the certification of units by a private organization operating in the other state.

(3) A system of national or regional monitoring agencies or teams has been proposed. Such an agency, or agencies would evaluate both private and government organizations engaged in the evaluation and certification of manufactured buildings and building components. Based on the findings of such an agency or agencies, interstate acceptance could be extended to states using either third party or state agency regulatory systems, and the common use of third parties would not be required.

(4) One state (Maryland) has a unique system: reciprocity can be granted to other states, but with the provision that each plant from which units are to be shipped to Maryland employ a Maryland certified inspector (this same provision also applies to plants located within the State of Maryland). Thus, the State of Maryland, while accepting the other state's evaluation and certification, does keep some direct control over the manufacturer's operation.

It appears that all of the four proposals and procedures outlined above have some validity. Certainly the use of common third parties by various states does simplify interstate acceptance, although it may not make such acceptance automatic or almost automatic. The legal aspects must be considered and satisfied. The existence of regional or national monitoring agencies could be valuable to states considering the acceptance of out-of-state units. Finally, the maintenance of some form of control even over out-of-state manufacturers through state certified inspectors may satisfy the legal requirements, while at the same time complementing the other state's or the monitoring agency's program. Accordingly, it is suggested that in any process to be used for implementing regional or national areas for interstate acceptance of certified manufactured buildings and building components, the above principles be considered.

d. Model Documents

Because of the lack of uniformity in the regulatory process of interstate acceptance of manufactured building, CES Project has not developed specific documents for the associated interstate communication and information exchange. However, in the development of all CES documents the needs of such communication and information

exchange were considered, so that the various forms and checklists will assist both the manufacturer and the regulatory agencies in the application, evaluation, approval, inspection, and certification of units produced for interstate commerce.

The manufacturer and the agencies, for example, would benefit from a uniform system of submission requirements as proposed in CES Documents No. S-02 through S-11, eliminating the need to prepare separate sets of submission documents for each state in which approval for a building system is sought.

Also, the Building System Approval Report (CES Document No. A-03) was developed so that it contains all information required to obtain in one state approval for a building system that has been previously approved in another state, provided that the state in which approval was first obtained is requiring compliance to the same or similar codes and standards, and has at least equal or similar effectiveness of enforcement as the state to whom the new application for approval is made. The manufacturer seeking approval in the second state need submit only a copy of the approval report issued and signed by the first state.

In a case where the second state does not accept the approval of the first state, because it either uses substantially different codes and standards or the second state does not consider the first state's enforcement activity to be at least equal or similar to its own, the application for approval of a building system which was previously approved in the first state could be accompanied by a copy of the various evaluation checklists (CES Document Nos. E-04 through E-08 and E-10) used by the first state. Thus, the Evaluation Agency of the second state could determine the compliance of the submitted building system to its own codes, rules, and regulations, without the necessity of a complete and exhaustive new review and evaluation.

Finally, in the area of certification, the availability of approved inspection checklists (CES Document No. C-02) also will permit the second state to determine whether or not the inspection activity in the first state meets its own set of criteria, without the necessity of a new exhaustive review of the entire compliance assurance program.

In addition to these examples of situations in which the CES Documentation would promote interstate acceptance of manufactured building systems, manufactured buildings, and components, CES Document No. E-11 (Manufacturing Facility Evaluation Report) could be used in the monitoring of Evaluation and Inspection Agencies by regional teams as briefly discussed under (3) on the previous page, and could thus be instrumental in establishing the regional monitoring team approach to reciprocity among the states.

6. SUMMARY

This CES Project report presents model documentation for consideration and implementation in state regulatory programs for manufactured buildings and building components. This documentation covers the regulatory activity from the submission of a building system application through evaluation, approval, to inspection and certification or labeling of manufactured buildings and components. Local building and occupancy permit documentation is also included.

The presented model documentation provides suggested forms, checklists and commentary based on requirements of a state regulatory system as implied by the Model Act and Model Rules and Regulations developed by a special working task group under the sponsorship of the Department of Commerce. Although the Model Legislation applies to all occupancies, the model documentation presented herein is primarily directed towards one and two family detached wood frame (factory-built) dwelling construction.

Another important purpose of this report is to stimulate interest, contribution, and discussion on the subject of documentation used in state building activities.

It is hoped that the eventual adoption of the model documentation, in whole or in part, by the regulatory bodies of the various states or even several states within a particular geographic region of the country will further promote interstate acceptance of manufactured buildings and building components. The orderly growth of this segment of the building industry all but requires that any obstacles in the building regulatory process be overcome and the attendant documentation requirements become somewhat standardized. It is with these goals in mind that the ultimate in a viable coordinated evaluation system can be attained.

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APPENDIXES

A - Model Manufactured Building Act (Page 265)

B - Model Rules and Regulations for the Manufactured Building Act (Page 279)

APPENDIX A

REPRINTED FROM

1974 SUGGESTED STATE LEGISLATION

VOLUME XXXIII

MANUFACTURED BUILDING ACT

Developed by
The Committee on Suggested State Legislation

The Council of State Governments
Iron Works Pike
Lexington, Kentucky 40511

Manufactured Building Act

With the growth of a nationwide market for many types of building products, including whole buildings, and regional markets for many others, a uniform and comprehensive approach to regulation of the manufacture and construction of buildings has become highly desirable. The Manufactured Building Act and two companion bills, the Mobile Home Act and the State Building Code Act, respond to this need through state rather than federal action by promoting intra- and interstate uniformity of regulation and interstate reciprocal acceptance of manufactured building products. This Act represents a synthesis of the previous experience of federal, state and local governments in regulating construction to enable the States to better protect the public health, safety and welfare. The three Acts are written in a manner permitting them to be administered by a single state agency and a single building code council if a State enacts any two of them, or all three. If a State enacts but one of them, each Act is complete and may be administered independently.

The basic regulatory scheme of the Manufactured Building Act is as follows: (1) a manufacturer submits to the state agency or to an independent third party approved by the State the plans, specifications and other necessary documentation for the buildings which he intends to produce; (2) if these are approved as complying with the law, either the state agency or an independent third party approved by the State will inspect the actual buildings or building components as they are being produced; (3) units which comply are so designated by a state-approved label attached at the factory; and (4) local enforcement agencies inspect such units upon installation to determine whether they are correctly installed.[1]

The Manufactured Building Act was drafted by representatives of the National Conference of States on Building Codes and Standards; the National Association of Building Manufacturers; the International Conference of Building Officials, Inc.; the Building Officials and Code Administrators International, Inc.; the Southern Building Code Congress, with assistance by the U.S. Department of Commerce and the U.S. Department of Housing and Urban Development. It was sponsored for publication by the National Conference of States on Building Codes and Standards, a cooperating member of the Council of State Governments.

Suggested Legislation

(Title, enacting clause, etc.)

Section 1. [*Short Title.*] This Act may be cited as the [State] Manufactured Building Act.

[1]A section-by-section analysis of the Act, prepared by the drafting group, has been distributed to State Legislative Service Agencies by the Council of State Governments.

Section 2. [*Legislative Findings and Intent.*] [Note: Each State should write its own legislative findings to meet the individual conditions. The following are suggested possibilities:]

[Conditions exist in this State which create a shortage of decent, safe, and sanitary housing and buildings, such as schools, hospitals, and other public facilities, at prices which residents and political subdivisions of this State can afford. This shortage contributes to an increase in community tension, crime, and blight and constitutes a menace to the health, safety, and welfare of the residents of this State. Increasing the available supply of housing and other buildings at prices which residents and political subdivisions of this State can afford will alleviate community tension and blight, reduce crime, increase the building inventory subject to property taxes, increase employment, attract new industries, and materially improve the health, safety, and welfare of the residents of this State.]

[The production and utilization of manufactured buildings and building components and the use of new and improved technologies, techniques, and materials will increase the available supply of housing and other buildings at prices which most residents and political subdivisions of this State can afford.]

[Uniformity of building codes governing manufactured buildings and building components and uniformity in procedures for enforcing codes throughout the Nation and the State are matters of nationwide and statewide interest and concern in that uniformity would increase the efficiency of the manufactured building industry and further assure the safety of its products.]

[The production and utilization of manufactured buildings and building components and the use of new technologies, techniques, and materials are enhanced by the utilization and application of uniform building codes and uniform procedures for enforcing building codes within this State, and would be further enhanced by widespread reliance upon uniform and reasonable material specifications and the use of performance criteria.]

[Manufactured buildings and building components, because of the manner of their construction, assembly, and use, like other finished products with concealed vital parts, may present hazards to health and safety unless properly manufactured. Also, manufactured buildings and building components may contain hazardous defects not readily ascertainable when inspected by purchasers or by local enforcement agencies. The Legislature intends, by this Act, to provide protection to the public against these possible hazards.]

[The Legislature intends, by this Act, to create conditions in this State which will facilitate the production and use of manufactured buildings and building components and the use of new technologies, techniques, and materials consistent with the requirements of health, safety, and welfare.]

[The Legislature intends that the administration and enforcement of this Act shall be within the jurisdiction of a single administrative agency.]

Section 3. [*Definitions.*] Wherever used or referred to in this Act, the terms defined herein have the meanings assigned to them unless a different meaning is clearly indicated by the context.

(1) "Administrative agency" means the [agency] which is charged with the administration and enforcement of this Act.

(2) "Approved" means approved by the [administrative agency].

(3) "Building component" means any subsystem, subassembly, or other system designed for use in or as part of a structure, which may include structural, electrical, mechanical, plumbing, and fire protection systems and other systems affecting health and safety.

(4) "Building system" means plans, specifications, and documentation for a system of manufactured buildings or for a type or a system of building components, which may include structural, electrical, mechanical, plumbing, and fire protection systems, and other systems affecting health and safety, including variations which are submitted as part of the building system.

(5) "Closed construction" means any building, building component, assembly, or system manufactured in such a manner that all concealed parts or processes of manufacture cannot be inspected before installation at the building site without disassembly, damage, or destruction.

(6) "Compliance assurance program" means the system, documentation, and methods for assuring that manufactured buildings and building components including their manufacture, storage, transportation, assembly, handling, and installation conform with this Act and the rules and regulations promulgated pursuant thereto.

(7) "Evaluation agency" means an approved person or organization, private or public, including a governmental agency, determined by the [administrative agency] to be qualified by reason of facilities, personnel, experience, and demonstrated reliability and independence of judgment, to investigate, evaluate, and approve building systems or compliance assurance programs, and to issue labels.

(8) "Independence of judgment" means not being affiliated with or influenced or controlled by building manufacturers or by producers, suppliers, or vendors of products or equipment used in manufactured buildings and building components, in a manner likely to affect capacity to render reports and findings objectively and without bias.

(9) "Inspection agency" means an approved person or organization, private or public, including a governmental agency, determined by the [administrative agency] to be qualified by reason of facilities, personnel, experience, and demonstrated reliability and independence of judgment, to conduct or supervise compliance assurance programs, certify manufactured buildings and building components, and issue and attach labels.

(10) "Installation" means the process of affixing, or assembling and affixing, manufactured buildings or building components on the building site, or to an existing building.

(11) "Label" means an approved device or seal evidencing certi-

fication in accordance with this Act and the rules and regulations promulgated pursuant thereto.

(12) "Local enforcement agency" means the agency or agencies of local government with authority to make inspections of buildings and to enforce the laws, ordinances, and regulations enacted by the State and by the local government which establish standards and requirements applicable to the construction, alteration, repair, occupancy, or demolition of buildings.

(13) "Local government" means any county, city, municipal corporation, town, or other political subdivision of this State with authority to establish standards and requirements applicable to the construction, alteration, repair, occupancy, or demolition of buildings.

(14) "Manufactured building" means any building which is of closed construction and which is made or assembled in manufacturing facilities, on or off the building site, for installation, or assembly and installation, on the building site. "Manufactured building" also means any building of open construction for which certification under this Act is sought by the manufacturer and which is made or assembled in manufacturing facilities away from the building site for installation, or assembly and installation, on the building site. "Manufactured building" does not mean "mobile home."

(15) "Mobile home" means a factory-assembled, movable dwelling designed and constructed to be towed on its own chassis, comprised of frame and wheels, to be used without a permanent foundation, and distinguishable from other types of dwellings in that the standards to which it is built include provisions for its mobility on that chassis as a vehicle.

(16) "Open construction" means any building, building component, assembly, or system manufactured in such a manner that all portions can be readily inspected at the building site without disassembly, damage, or destruction.

Section 4. [*Building Code Council.*]

(a) A [Building Code Council or such other name as may be designated for this function, hereinafter called the "Council"] is created. The [Council] shall consist of 12 qualified persons: the [chief executive officer of the administrative agency] (nonvoting), a representative of the general public, one registered architect, one registered professional engineer (structural), one registered professional engineer (mechanical), one registered professional engineer (electrical), one licensed general contractor, one representative of the building trades, one homebuilder, one building code enforcement officer from local government, one mobile home manufacturer, and one building manufacturer.

(b) Members of the [Council], except the [chief executive officer of the administrative agency], shall be appointed by the Governor for four-year terms of office and serve until qualified successors are appointed, except that the Governor, for the first appointments to the [Council], shall appoint three members for terms of four years, three members for terms of

three years, three members for terms of two years, and two members for terms of one year. Three or more consecutive failures by a member to attend meetings of the [Council], without reasonable cause, constitutes cause for removal of the member from the [Council] by the Governor, or by the chairman with concurrence by a majority of the [Council]. The Governor shall appoint a new member when a vacancy occurs. When a vacancy occurs, a majority of the remaining members of the [Council] may appoint an interim member to fill the vacancy for the remainder of the term or until the Governor appoints a permanent member.

(c) Members of the [Council] shall receive an allowance of $[ ] per day or part of a day actually spent attending to the business of the [Council] and be compensated for traveling expenses as provided in [appropriate statutory reference].

(d) The [Council] shall meet at the written request of the [chief executive officer of the administrative agency] or of three or more members of the [Council]; but the [Council] shall meet no fewer than [ ] times per year.

(e) The [Council] shall establish rules and regulations and bylaws for its internal operation.

(f) The [Council] shall be part of the [administrative agency] and exercise its powers, duties, and functions independently of the [administrative agency], except that all budgeting, procurement, and related functions shall be under the direction and supervision of the [chief executive officer of the administrative agency].

(g) No member may act as a member of the [Council] or vote as such in connection with any matter in which he has a private interest.

(h) The [Council] may employ an executive secretary. The [administrative agency] shall assign personnel to assist the [Council] in the performance of its functions.

Section 5. [*Rules and Regulations.*]

(a) The [administrative agency] shall and any other interested party may propose rules and regulations and amendments thereto. The [Council] shall adopt and may amend or repeal rules and regulations. After adoption by the [Council], the [administrative agency] shall publish, administer, and enforce the rules and regulations.

(b) The rules and regulations shall establish standards, specifications, and requirements for manufactured buildings and building components; they also shall establish requirements for building systems and compliance assurance programs. To the extent practicable, the standards, specifications, and requirements shall be set forth in terms of performance objectives, so as to, inter alia, facilitate the use of new technology, techniques, and materials. Preference shall be given to performance standards reasonably consistent with those of other States.

(c) The [administrative agency] shall consider and may propose, and the [Council] shall consider and may adopt the codes, standards, and requirements which apply or could be applied to manufactured buildings

and building components and are promulgated by such organizations as the Building Officials and Code Administrators International, Inc., International Conference of Building Officials, Southern Building Code Congress, Council of American Building Officials, and other nationally recognized organizations, including governmental agencies. The [Council] shall endeavor to maintain the rules and regulations current with the state of the art.

(d) In adopting codes, standards, and requirements, no changes or modifications may be made therein without express findings setting forth reasonable cause for the changes or modifications. Any changes or modifications adopted by the [Council] shall be submitted with the reasons therefor, for consideration by the appropriate organization for amendment of the code, standard, or requirement.

(e) The [Council] shall provide for a public hearing prior to adopting any rule or regulation or amendment thereto, following adequate public notice.

(f) The [chief executive officer of the administrative agency] shall establish a position of [building official], establish minimum qualifications for the position, and appoint a qualified person to fill the position. The [building official] shall assist the [chief executive officer of the administrative agency] in the administration and enforcement of all provisions of this Act and the rules and regulations promulgated pursuant thereto.

(g) Except as provided by or pursuant to this Act, land use zone requirements, fire zone boundaries, building set-back requirements, side and rear yard requirements, property line requirements, and on-site development, construction, installation, and inspection, are specifically and entirely reserved to local government.

Section 6. [*Approval.*]

(a) The [administrative agency] shall evaluate building systems and approve those which it determines to be in compliance with this Act and the rules and regulations. The [administrative agency] may utilize the results of approved tests to determine if a building system meets the requirements of this Act and the rules and regulations, if that determination cannot be made from evaluation of plans, specifications, and documentation alone.

(b) The [administrative agency] shall evaluate manufacturers' compliance assurance programs and approve those which it determines to be in compliance with this Act and the rules and regulations.

(c) A building system, a compliance assurance program, or an amendment thereto, which has been approved, shall not be varied in any way without authorization by the [administrative agency] in accordance with the rules and regulations.

(d) The [administrative agency] may authorize evaluation agencies to evaluate and approve building systems or compliance assurance programs and to issue labels. The [administrative agency] may suspend or revoke such authorization for cause.

(e) The [administrative agency] shall periodically monitor the entire

process of building system approval and compliance assurance program approval of each evaluation agency in order to verify its reliability.

(f) The [administrative agency] may suspend or revoke, or cause to be suspended or revoked, the approval of any building system or any compliance assurance program whenever the approval was issued in error, or on the basis of incorrect information, or in violation of this Act or of any rule or regulation. If the [administrative agency] determines that buildings or building components manufactured pursuant to an approved building system do not comply with this Act or the rules and regulations, and the manufacturer fails to comply with a corrective order, the [administrative agency] shall suspend or revoke, or cause to be suspended or revoked, the approval of the manufacturer's compliance assurance program. Notice of suspension or revocation of an approval shall be in writing with the reasons for suspension or revocation set forth therein. Appeals from suspensions or revocations shall receive timely review pursuant to Section 13 hereof.

Section 7. [*Certification.*]

(a) Manufactured buildings or building components shall be certified by the [administrative agency] as complying with this Act and the rules and regulations, if they have been manufactured in accordance with an approved building system and passed inspection in accordance with an approved compliance assurance program. Certification shall be evidenced by the attachment to each manufactured building or building component (or group of components) of a label issued by the [administrative agency]. Certified manufactured buildings or building components shall not be altered in any way prior to the issuance of [occupancy permits, certificates of occupancy, or whatever similar device is used] without resubmission for approval of the alteration and of the unit which includes the alteration.

(b) The [administrative agency] may authorize inspection agencies to perform all or part of the inspection and certification of manufactured buildings or building components, including either or both the issuance and the attachment of labels thereto. The [administrative agency] may suspend or revoke such authorization for cause.

(c) Notwithstanding the provisions of any other law, manufactured buildings and building components certified pursuant to this Act shall be deemed to comply with the requirements of all laws, ordinances, and regulations of this State or of local governments which govern the matters within the scope of the approval and certification applicable to manufactured buildings or building components, including those bearing upon technologies, techniques, and materials, or the safety of buildings or building components. Local enforcement agencies shall issue building permits for certified manufactured buildings prior to installation, and issue [certificates of occupancy] for certified manufactured buildings after they have been installed and inspected pursuant to Section 11 of this Act; any manufactured building or building component found not to comply with this Act shall be brought into compliance with this Act before the

[certificate of occupancy] is issued.

(d) The [administrative agency] shall suspend or revoke, or cause to be suspended or revoked, the certification of any manufactured building or building component which the [administrative agency] finds not to comply with this Act or the rules and regulations, or which has been manufactured pursuant to a building system or compliance assurance program as to which approval has been suspended or revoked, or which has been altered after certification. If the manufacturer fails to comply with a corrective order, labels of certification shall be removed from any such manufactured building or building component until it is brought into compliance with this Act and the rules and regulations. Notice of suspension or revocation of certification shall be in writing with the reasons for suspension or revocation set forth therein. Appeals from suspensions or revocations shall receive timely review pursuant to Section 13 hereof.

Section 8. [*Limitation on Use.*] No manufactured building or building component, manufactured after [ ] shall be sold for, delivered to, or installed on a building site located in any jurisdiction of this State which lacks a building code, unless such building or building component has been certified pursuant to this Act, except that any on-site inspection required pursuant to this Act shall not apply. In jurisdictions with building codes, the manufacturer shall be permitted, in lieu of obtaining approval and certification by the [administrative agency], to apply for approval in accordance with the building code of general applicability, and in that event shall comply with such code.

Section 9. [*Exception for Special Environmental Conditions.*]

(a) The [administrative agency] shall limit an approval of a building system by requiring each manufacturer to list on each manufactured building or building component (or group of components) manufactured pursuant to that building system, the environmental conditions which the manufactured building or building component meets. No manufactured building or building component shall be installed on a site or occupied in an area of this State where special environmental conditions including, but not limited to, snow, wind, seismic conditions, temperature, and humidity require special or different standards, unless the manufactured building or building component meets the standards. If a manufactured building or building component is to be altered from the approved building system to meet the special environmental conditions, an amended building system shall be submitted for approval.

(b) In jurisdictions having building codes, the local government shall prescribe requirements for special environmental conditions requiring special or different building standards for those parts of the site development, foundation, and other work reserved to local enforcement agencies. Such requirements shall be based on express findings setting forth reasonable cause therefor, and shall be subject to the [local appeals procedure].

(c) A local enforcement agency may propose special local environmental

requirements for adoption pursuant to Section 5 of this Act, and unless the [Council] disapproves the proposal within 60 days of the date of its submission, or at the next meeting of the [Council], whichever is sooner, the proposal shall be deemed adopted.

Section 10. [*Reciprocity.*]

(a) If the [administrative agency] finds that the standards for the manufacture and inspection of manufactured buildings or building components prescribed by statute or rules and regulations of another State, or other governmental agency, meet the objectives of this Act and the rules and regulations and are enforced satisfactorily by the other State, or other governmental agency, or by their agents, the [administrative agency] shall accept manufactured buildings or building components which have been certified by the other State or governmental agency, and assure that the appropriate label is attached thereto. The standards of another State shall not be deemed to be satisfactorily enforced unless such other State provides for notification to the [administrative agency] of suspensions or revocations of approvals issued by that other State, in a manner satisfactory to the [administrative agency], and so notifies the [administrative agency].

(b) The [administrative agency] shall suspend or revoke, or cause to be suspended or revoked, its acceptance or certification, or both, of certified manufactured buildings or building components if it determines that the standards for the manufacture and inspection of such manufactured buildings or building components of another State or other governmental agency do not meet the objectives of this Act and the rules and regulations, or that the standards are not being enforced to the satisfaction of the [administrative agency]. Notice of the suspension or revocation shall be in writing with the reasons set forth therein. Appeals from suspensions or revocations shall receive timely review pursuant to Section 13 hereof.

(c) If another State or governmental agency, or its agent, suspends or revokes its approval or certification, the acceptance or certification, or both, granted under this section shall be suspended or revoked accordingly.

(d) In order to encourage reciprocity, the [administrative agency] and the [Council] shall cooperate with similar authorities in other jurisdictions and with nationally recognized codes and standards organizations in developing mutually acceptable methods and procedures for testing, evaluating, approving, and inspecting manufactured buildings or building components, and otherwise encouraging their production and acceptance.

Section 11. [*Inspection.*]

(a) Any person or firm manufacturing buildings or building components, and desiring certification, shall agree in writing that the [administrative agency] has the right to conduct unannounced inspections at any reasonable time.

(1) The [administrative agency] shall periodically make, or cause to

be made, inspections of the entire process of manufacture and certification of buildings and building components produced under approved building systems, and of buildings and building components already certified, in order to verify the reliability of each compliance assurance program and inspection agency.

(2) In addition to other on-site inspection provided for in subsection (d) of this section, the [administrative agency] shall inspect, or cause to be inspected, certified manufactured buildings or building components it determines sufficiently damaged after certification to warrant such inspection, and to take action with regard to these buildings or building components as authorized under Section 7(d) hereof, or as otherwise necessary to eliminate dangerous conditions.

(3) No inspection entailing disassembly, damage to, or destruction of certified manufactured buildings or building components may be conducted except to implement Sections 7(d) or 11(a)(1) and (2) hereof.

(b) The [administrative agency] shall authorize inspectors and other representatives to travel within or without the State for any purpose directly related to the administration and enforcement of this Act.

(c) The [administrative agency] may authorize inspection agencies to perform all or part of its inspection functions under this section. The [administrative agency] may suspend or revoke such authorization for cause.

(d) In jurisdictions having building codes, local enforcement agencies shall inspect all manufactured buildings or building components upon, or promptly after, installation at the building site to determine if all applicable instructions or requirements have been followed. This inspection may include tests for tightness of plumbing and mechanical systems, for malfunctions in the electrical system, and a visual inspection for obvious violations of the rules and regulations. Destructive disassembly of certified buildings or building components shall not be performed in order to conduct such tests or inspections, nor shall standards more stringent than those promulgated pursuant to this Act be imposed. Nondestructive disassembly may be performed only in accordance with the rules and regulations. Local enforcement agencies shall cause the disposition of noncomplying manufactured buildings and building components in accordance with applicable law and with the rules and regulations.

(e) In jurisdictions having building codes, local enforcement agencies shall inspect site preparation work, including foundations, for compliance with applicable law.

Section 12. [*Fees.*]

(a) The [administrative agency] shall establish a schedule of fees in connection with the administration and enforcement of this Act and publish it in the rules and regulations. The amount of the fees shall be based on the cost of performing functions undertaken pursuant to this Act. The effects of the fees upon the cost of buildings to residents and political subdivisions of this State shall be considered by the [administrative agency] in

setting and approving its own fees as well as the fees charged by evaluation and inspection agencies under contract to it.

(b) Fees charged by local enforcement agencies for activities conducted under this Act or the rules and regulations shall be consistent with fees charged by them for other types of buildings regulated by local government.

Section 13. [*Appeals.*] The [Council] shall promptly hear and decide appeals brought by any person or party in an individual capacity, or on behalf of a class of persons or parties, affected by any rule, regulation, or decision pursuant to this Act. Final decisions by the [Council] are reviewable on appeal (or on successive appeals) in the [courts of competent jurisdiction].

Section 14. [*Injunctive Relief*] The [administrative agency] may obtain injunctive relief from any court of competent jurisdiction to enjoin the sale, delivery, or installation of manufactured buildings or building components, or of buildings utilizing such components, for which certification is required under this Act, upon an affidavit of the [administrative agency] specifying the manner in which the manufactured buildings or building components do not conform to the requirements of this Act or the rules and regulations.

Section 15. [*Statutory Civil Action.*] Notwithstanding any other remedies available, any person or party, in an individual capacity, or on behalf of a class of persons or parties, damaged as a result of a violation of this Act or the rules and regulations, has a cause of action in any court of competent jurisdiction against the person or party to whom the label evidencing certification has been issued with respect to the pertinent manufactured building(s) or building component(s), or, if it is not certified, against the manufacturer of the pertinent manufactured building(s) or building component(s). An award may include damages and the cost of litigation, including reasonable attorneys' fees. [The cause of action created by this section is subject to the same limitations period applicable in this State for causes of action of similar nature.]

Section 16. [*Criminal Penalties.*]

[(a) Any person who violates any provision of this Act, or of the rules and regulations, is guilty of a misdemeanor, and, upon conviction, shall be fined not more than $[ ] or imprisoned for not more than [ ] for each offense, or both.]

[(b) A separate violation is deemed to have occurred with respect to each building or building component not in compliance with the Act or the rules and regulations. Each day the violation continues constitutes a separate violation.]

[(c) Any person who counterfeits or alters one or more labels, or who makes fraudulent or misrepresentative use of one or more labels, or any

person who knowingly makes use of one or more counterfeit or altered labels, is guilty of a felony and, upon conviction, shall be fined not less than $[ ] nor more than $[ ] or imprisoned for not more than [ ] years for each offense, or both.]

Section 17. [*Severability.*] If any provision of this Act or the application thereof to any person or circumstance is held invalid, the invalidity does not affect other provisions or applications of this Act which can be given effect without the invalid provision or application, and to this end the provisions of this Act are severable.

Section 18. [*Effective Date.*] This Act shall take effect . . .

APPENDIX B

MODEL

RULES AND REGULATIONS

FOR THE

MANUFACTURED BUILDING ACT

National Conference of States on Building Codes and Standards
National Association of Building Manufacturers
Building Officials and Code Administrators International, Inc.
International Conference of Building Officials
Southern Building Code Congress
U.S. Department of Commerce
U.S. Department of Housing and Urban Development

"This document has not undergone legal review, nor has it been approved by any of the parties participating in the drafting of it."

DRAFT: 10/27/72

MODEL

RULES AND REGULATIONS

FOR THE

MANUFACTURED BUILDING ACT

FOREWORD

Objective. The objective of the Model Act and these Model Rules and Regulations is to create intra-state and inter-state conditions which will facilitate the production and utilization of manufactured buildings and building components while assuring code compliance of such construction, use of new technology, techniques and materials, and uniform practices for institutional accreditation and building system certification practices.

Purpose. The purpose of this model document is to provide rules and regulations pursuant to Section 5 of the Model Manufactured Building Act. After adoption by the Building Code Council, it is the responsibility of the Administrative Agency to promulgate, administer and enforce these rules and regulations.

Research and Standards Development. Since these rules and regulations have been developed during a period in which new concepts and rapid changes are being introduced in state regulatory programs pertaining to manufactured buildings, it is important that the Administrative Agency endeavor to maintain the rules and regulations current with the state-of-the-art. At the present time related research programs are being conducted by various state and federal agencies and other institutions pertaining to the evaluation and regulation of manufactured buildings. When new national consensus standards are developed from the results of these research programs, the Administrative Agency should recommend such standards for adoption and revise the related sections of these rules and regulations.

Evaluation and Inspection Agencies. These rules and regulations were developed to have sufficient flexibility to allow a state the maximum of administrative latitude in the structuring of its evaluation and inspection programs. At the time of the development of this document, the state-of-the-art in the inspection and evaluation areas has involved two systems--the use of independent third party agencies, and the development of state-based programs utilizing state governmental personnel. As written, these rules and regulations are applicable to either system. It is recommended that, in the consideration of these Rules and Regulations, that serious consideration be given to the use of independent third party agencies to fulfill the evaluation and inspection functions under the control of the Administrative Agency.

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PART I: DEFINITIONS

Wherever used or referred to in these rules and regulations, the terms defined herein shall have the meanings assigned to them unless a different meaning is clearly indicated by the context.

(A) Act "Act" means the Manufactured Building Act [cite appropriate statutory reference].

(B) Administrative Agency. "Administrative Agency" means _____ which
(name of agency)
is charged with the administration of the Act and these rules and regulations.

(C) Approved. "Approved" means approved by the [Administrative Agency].

(D) Building Code Council. "Building Code Council" means the Building Code Council established pursuant to Section 4 of the Act.

(E) Building Component. "Building Component" means any subsystem, subassembly, or other system designed for use in or as part of a structure, which may include structural, electrical, mechanical, plumbing and fire protection systems and other systems affecting health and safety.

(F) Building System. "Building System" means plans, specifications and documentation for a system of manufactured buildings or for a type or a system of building components, which may include structural, electrical, mechanical, plumbing and fire protection systems and other systems affecting health and safety, including variations which are submitted as part of the building system.

(G) Closed Construction. "Closed Construction" means any building, building component, assembly or system manufactured in such a manner that all concealed parts or processes of manufacture cannot be inspected before installation at the site without disassembly, damage, or destruction.

(H) Compliance Assurance Program. "Compliance Assurance Program" means the system, documentation and methods of assuring that manufactured buildings and building components, including their manufacture, storage, transportation, assembly, handling and installation, conform with the Act and these rules and regulations.

(I) Evaluation Agency. "Evaluation Agency" means an approved person or organization, private or public, including a governmental agency, determined by the [Administrative Agency] to be qualified by reason of facilities, personnel, experience, and demonstrated reliability and independence of judgment, to investigate, evaluate and approve manufactured buildings or building components or building systems or compliance assurance programs and to issue labels.

(J) Independence of Judgment. "Independence of Judgment" means not being affiliated with or influenced or controlled by building manufacturers or by producers, suppliers or vendors of products or equipment used in manufactured buildings and building components, in any manner which is likely to affect capacity to render reports and findings objectively and without bias.

(K) Inspection Agency. "Inspection Agency" means an approved person or organization, private or public, including a governmental agency, determined by the [Administrative Agency] to be qualified by reason of facilities, personnel, experience, and demonstrated reliability and independence of judgment, to conduct or supervise compliance assurance programs, to certify manufactured buildings and building components, and to issue and attach labels.

(L) Installation. "Installation" means the process of affixing, or assembling and affixing, manufactured buildings or building components on the building site, or to an existing building.

(M) Label. "Label" means an approved device or seal evidencing certification in accordance with the Act and these rules and regulations.

(N) Local Enforcement Agency. "Local Enforcement Agency" means the agency or agencies of local government with authority to make inspections of buildings and to enforce the laws, ordinances, and regulations enacted by the State and by the local government which establish standards and requirements applicable to the construction, alteration, repair or demolition of buildings.

(O) Local Government. "Local Government" means any county, city, municipal corporation, village, town, or other political subdivision of this State with authority to establish standards and requirements applicable to the construction, alteration, repair or demolition of buildings.

(P) Manufactured Building. "Manufactured Building" means any building which is of closed construction and which is made or assembled in manufacturing facilities, on or off the building site, for installation, or assembly and installation, on the building site. Manufactured building also means any building of open construction for which certification under the Act is sought by the manufacturer and which is made or assembled in manufacturing facilities away from the building site, for installation, or assembly and installation, on the building site.

(Q) Open Construction. "Open Construction" means any building, building component, assembly or system manufactured in such a manner that all portions can be readily inspected at the building site without disassembly, damage or destruction.

PART II: SCOPE

SECTION 1: APPLICABILITY

These rules and regulations govern the design, manufacture, handling, storage, transportation and installation of manufactured buildings and building components intended for installation in this State or in any other State or local governmental jurisdiction in which such buildings or building components and the labels thereon are accepted.

(A) Manufactured buildings or building components may be sold for, delivered to or installed on building sites located in any jurisdiction of this State which has a local building code if: (1) such buildings or building components have been approved and certified pursuant to the Act and these rules and regulations; or, (2) at the option of the manufacturer, if such buildings or building components have been approved by the appropriate local enforcement agency pursuant to the local building code of general applicability.

(B) No manufactured buildings or building components shall be sold for, delivered to or installed on building sites located in any jurisdiction of this State which lacks a building code unless such manufactured buildings or building components have been certified pursuant to the Act and these rules and regulations, except that no on-site inspection (provided for in Section 5 of Part IV hereof) shall be required.

SECTION 2: PRE-EMPTION

Manufactured buildings and building components certified pursuant to these rules and regulations shall be deemed to comply with the requirements of all laws, ordinances, rules and regulations which govern the matters within the scope of the approval and certification, regardless of the provisions of any other such law, ordinance, rule or regulation.

SECTION 3: APPLICABILITY OF LOCAL LAW

(A) Except as provided by or pursuant to the Act and these rules and regulations, land use zone requirements, performance-based fire zone requirements, building set-back requirements, side and rear yard requirements, property line requirements, and on-site development, construction and inspection are specifically and entirely reserved to the local government.

(B) In areas of the State where special environmental conditions exist which require special or different building standards, pursuant to Part III, Section 1 hereof, local government shall prescribe such standards for those parts of the site development, foundation and other work, for which responsibility is vested in local government pursuant to Part II, Section 3(A) hereof; provided that such standards may not be more stringent than those imposed on other types of buildings in the area.

PART III: STANDARDS

SECTION 1: STANDARDS, SPECIFICATIONS AND REQUIREMENTS ADOPTED

Building systems shall comply with

[The actual standards to be used are to be inserted here. To the extent practicable, the standards and requirements established shall be set forth in terms of performance objectives, so as to facilitate the use of new technology, techniques and materials. In establishing such standards, specifications and requirements, the following nationally recognized codes and standards, for example, shall be considered and may be adopted:

UNIFORM BUILDING CODE, ICBO, 5360 Workman Mill Road, Whittier, California 90601
UNIFORM MECHANICAL CODE, ICBO, IAMPO
UNIFORM PLUMBING CODE, IAMPO, 5032 Alhambra Avenue, Los Angeles, California 90032
BASIC BUILDING CODE, BOCA, 1313 E. 60th Street, Chicago, Illinois 60637
BASIC PLUMBING CODE, BOCA
BASIC MECHANICAL CODE, BOCA
SOUTHERN STANDARD BUILDING CODE, SBCC, 1116 Brown-Marx Building, Birmingham, Alabama 35203
SOUTHERN STANDARD PLUMBING CODE, SBCC
SOUTHERN STANDARD GAS CODE, SBCC
NATIONAL ELECTRICAL CODE, N.Fi.P.A., 60 Batterymarch Street, Boston, Massachusetts
ONE AND TWO FAMILY DWELLING CODE, BOCA, American Insurance Association, SBCC, ICBO.]

Any amendments in the adopted codes and standards shall be submitted, with the reasons therefor, for consideration by the appropriate organization for amendment of the code or standard.

The provisions of these rules and regulations are not intended to prevent the use of any technology, techniques or materials not specifically prescribed by the codes, standards, specifications and requirements, provided any such alternate has been approved. The [Administrative Agency] may approve any such alternate provided it finds that the proposed design is satisfactory, and that the material, method, or work offered, is, for the purpose intended, consistent with the adopted codes and standards including quality, strength, effectiveness, fire resistance, durability and safety. The [Administrative Agency] shall require that sufficient evidence or proof be submitted to substantiate any claims that may be made regarding the use of any such alternate.

(A) The [Administrative Agency] shall maintain appropriate information, indicating those areas of the State which it has established as having special environmental conditions such as snow, wind loads, seismic conditions, temperature, humidity and soil conditions requiring special or different building standards. Such information shall be available for public inspection. [Local jurisdictions may submit such information.]

SECTION 2: AMENDMENTS

The [Administrative Agency] may propose amendments of these rules and regulations, including adopted codes, standards, specifications and requirements to the Building Code Council. Each such amendment shall include a proposed date for the amendment to take effect. All public hearings concerning adoption, promulgation, or amendment to these rules and regulations shall be held pursuant to [insert appropriate legal criterion].

(A) Consistent with Part IV, Section 2(A)(8) hereof, the [Administrative Agency] shall notify all manufacturers with approved building systems, local governmental jurisdictions and other concerned persons of all amendments, and each manufacturer shall have no more than 180 days or such additional time as the [Administrative Agency] shall deem reasonable following the sending of such notification to submit to the [Administrative Agency] and comply with such modifications of its building systems as may be required to comply with such changes. All manufactured buildings or building components manufactured (i) prior to the effective date of such changes or (ii) during the 180 day period following the sending of notice to the manufacturer, or (iii) in the case of any manufacturer who submits his modifications to the [Administrative Agency] as required but receives no affirmative or negative response from the [Administrative Agency] with respect thereto, following such 180 day period, may be certified if they conform to the unamended, approved building system. Where imminent danger to life safety is involved, the [Administrative Agency] may require that immediate effect be given to amendments to the codes, standards, specifications and requirements adopted herein. For purposes of this Section, a manufactured building or building component is deemed to be manufactured at such time as the label is attached to it in accordance with the approved compliance assurance program.

(B) A local enforcement agency may propose to the [Administrative Agency] that a finding be made that known special environmental conditions such as snow, wind loads, seismic conditions, temperature, humidity and soil conditions exist in the area over which the local enforcement agency has jurisdiction, and that the appropriate maps and information be amended, if necessary, in accordance with such findings. Unless the Building Code Council disapproves such findings within sixty days of the date of its submission, or at the next meeting of the Council, whichever is sooner, the proposal shall be deemed adopted and the appropriate maps and information shall be amended accordingly.

PART IV: ADMINISTRATION AND ENFORCEMENT

SECTION 1: ENFORCEMENT RESPONSIBILITY

The [Administrative Agency] shall administer and enforce all provisions of these rules and regulations. The [Administrative Agency] shall have the responsibility for evaluating and approving building systems, and inspecting and certifying manufactured buildings and building components for compliance with these rules and regulations. The [Administrative Agency] shall accept manufactured buildings, building systems and compliance assurance programs labeled and certified by approved evaluation and inspection agencies.

SECTION 2: APPROVALS OF BUILDING SYSTEMS AND COMPLIANCE ASSURANCE PROGRAMS

The [Administrative Agency] shall approve building systems which comply with the codes, standards, specifications and requirements adopted in Section 1 of Part III and with the other requirements of the Act and these rules and regulations and shall approve compliance assurance programs which comply with the requirements of the Act and these rules and regulations.

(A) Building Systems

(1) In order to obtain approval for manufactured buildings or building components, a manufacturer shall submit a building system for evaluation by the [Administrative Agency] or an evaluation agency in accordance with the requirements of Part V hereof.

(2) Prior to a full evaluation, the [Administrative Agency] or evaluation agency shall determine that building systems submitted to it are suitable for processing. In the event that the application is found to be unsuitable for processing, the applicant shall be notified in writing of such unsuitability and the basis thereof within thirty (30) days of the date the application is received by the [Administrative Agency] or evaluation agency. In such event, all but $25.00 of the fee will be returned and the findings of unsuitability will be without prejudice. Any subsequent submission shall be treated as a new application.

(3) The [Administrative Agency] or evaluation agency may require tests to determine whether a building system meets the codes, standards, and requirements of the Act and these rules and regulations, if that determination cannot be made from evaluation of plans, specifications and documentation alone. The procedures used shall be reviewed and evaluated by the [Administrative Agency] or an evaluation agency.

(4) In the event a building system is disapproved, the [Administrative Agency] or an evaluation agency shall notify the applicant with a written explanation of the reasons for such disapproval attached thereto.

(5) Approval of building systems shall be evidenced by the stamp of approval of the [Administrative Agency], or that of an evaluation agency, on each sheet of the building system, or by other effective means of identification. Each sheet shall be serially numbered and shall indicate effective dates of revision. One copy of all approved plans, specifications and documentation shall be returned to the applicant.

(6) The [Administrative Agency] or an evaluation agency shall prepare and issue to the applicant a building system approval report signed by the drafter and by the person in charge of the evaluation, which shall be numbered and which shall contain a summary description of the building system and all of the conditions of its use including installation instructions.

(7) A building system, or any amendment thereto which has been approved, shall not be varied in any way without prior authorization by the [Administrative Agency] or evaluation agency. All approved changes shall be made a part of the written record of the approval. Such authorization shall be in writing or be confirmed in writing within ten days of any oral authorization.

(8) No changes in the codes, standards, specifications and requirements shall apply retroactively. The [Administrative Agency] shall notify all manufacturers with approved building systems and evaluation agencies of all such changes, and each manufacturer shall have no more than 180 days following the sending of such notification, or such additional time as the [Administrative Agency] shall deem reasonable, to submit to the [Administrative Agency] or the evaluation agency and comply with the necessary amendments to its already approved building system(s).

(9) Amendments to building systems may be proposed by submitting to the [Administrative Agency] or an evaluation agency for approval, appropriate plans, specifications, or documentation showing the effect of the proposed amendment on each building system.

(10) The [Administrative Agency] or an evaluation agency may suspend or revoke the approval of any building system whenever the approval was issued in error, was issued on the basis of incorrect information, or was issued in violation of these rules and regulations or is later found to be in violation of these rules and regulations. Notice of such suspension or revocation of the approval shall be in writing with the reasons for such suspension or revocation set forth therein. Appeals from suspensions or revocations shall receive timely review.

(B) Compliance Assurance Programs

(1) A manufacturer shall obtain approval for a compliance assurance program for his building system. Buildings or building components shall be manufactured in accordance with an approved program in order to be certified. Compliance assurance programs shall be submitted to the [Administrative Agency] or evaluation agency for approval in accordance with the requirements of Part V hereof.

(2) Prior to full evaluation, the [Administrative Agency] or an evaluation agency shall determine that the application for approval submitted to it is suitable for processing. In the event that the application is found to be unsuitable for processing, the applicant shall be notified in writing of such unsuitability and the basis thereof within thirty (30) days of the date the application is received by the [Administrative Agency] or an evaluation agency. In such event, all but $25.00 of the fee shall be returned and the findings of unsuitability shall be

without prejudice. Any subsequent submission shall be treated as a new application.

(3) Compliance assurance programs submitted for approval shall be evaluated for compliance with the Act and these rules and regulations.

(4) If a compliance assurance program is disapproved, the [Administrative Agency] or an evaluation agency shall notify the applicant with a written explanation of the reasons for disapproval attached thereto.

(5) Approval of compliance assurance programs shall be evidenced by the stamp of approval of the [Administrative Agency] or an evaluation agency on each sheet, or by other effective means of identification. One copy of the approved application and documentation shall be returned to the applicant.

(6) A compliance assurance program or any amendment thereto which has been approved shall not be varied in any way without prior authorization by the [Administrative Agency] or an evaluation agency. All approved amendments shall be made a part of the written record of the approval.

(7) The [Administrative Agency] or an evaluation agency may suspend or revoke or cause to be suspended or revoked, its approval of any compliance assurance program whenever the approval was issued in error, or was issued on the basis of incorrect information or was issued in violation of any of these rules and regulations. If the [Administrative Agency] or evaluation agency determines that manufactured buildings or building components manufactured pursuant to an approved building system do not comply with the Act or these rules and regulations and the manufacturer fails to comply with a corrective order, the [Administrative Agency] or an evaluation agency may suspend or revoke, or cause to be suspended or revoked, the approval of the manufacturer's compliance assurance program. Notice to the manufacturer and the inspection agency of suspension or revocation of approval shall be in writing with the reasons for suspension or revocation set forth therein. Appeals from suspensions or revocations shall receive timely review.

SECTION 3: CERTIFICATION

Manufactured buildings and building components, accepted by the [Administrative Agency] or an inspection agency as having been manufactured according to an approved building system and an approved compliance assurance program, shall be certified by the [Administrative Agency] or inspection agency as complying with the requirements of the Act and these rules and regulations. Certification shall be evidenced by the attachment of a label to each certified manufactured building or building component (or group of components).

The [Administrative Agency] may delegate to inspection agencies all or part of the inspection of, and either or both the issuance and attachment of labels to, manufactured buildings or building components.

(A) Manufacturer's Data Plate

The following information shall be placed directly or by reference on one or more permanent manufacturer's data plates in the vicinity of the electrical distribution panel, or in some other designated location, acceptable to the [Administrative Agency], on the manufactured building or building component where it will be readily accessible for inspection:

(1) Manufacturer's name and address;
(2) Serial number of the unit;
(3) Label serial number;
(4) Name and date of applicable nationally recognized codes complied with;
(5) Model designation and name of manufacturer of major factory-installed appliances;

and, if required by the adopted code, standard, specification or requirement:

(6) Identification of permissible type of gas for appliances and directions for water and drain connection;
(7) Snow, wind, seismic and other live loads;
(8) Electrical ratings - instructions and warnings on voltage;
(9) Special conditions or limitations on use of the unit, including unsuitability for areas in which specified environmental conditions prevail.
(10) Methods of assembly or joining multiple units
(11) Type of construction, including fire rating, occupancy class, interior finish flame spread class, and toxicity class;
(12) Building height and story limitation;
(13) Floor area;
(14) Minimum side yard requirements for fire rating.

If, in the opinion of the [Administrative Agency], the shape or size of a building component is such that this information cannot be attached to it permanently, the information may be placed in a manual crated with the component or on a tag attached to the crate in which the component is shipped, if the information is not such that the future occupant of the building should know it. If the occupant will need to know the information, it shall be contained in a manual which shall be presented to the occupant upon transfer of possession. If life safety is involved, the item in question shall be plainly labeled.

(B) Labels

Each manufactured building or building component (or group of components), which is certified pursuant to the Act and these rules and regulations, shall have permanently attached thereto, in a visible location as shown on the approved building system, an approved label which cannot be removed therefrom without destroying such label.

(1) Contents

An approved label shall bear the following information:

(a) "This label certifies that this building [or building component] has been manufactured in accordance with an approved building system and compliance assurance program approved by (name of evaluation agency) and inspected by (name of inspection agency) under the auspices and approval of (name of State)."
(b) Label serial number;
(c) Building system approval number;
(d) Manufacturer's serial number;
(e) The words "See data plate located on _____";
(f) The name of the agency issuing the label.

At the discretion of the [Administrative Agency], labels and data plates may be limited in size and content for components whose shape or size does not permit the full information to be placed thereon.

(2) Issuance

The approved label shall be issued by the [Administrative Agency] or its agents in accordance with the following:

(a) If the [Administrative Agency] delegates the issuance of labels to an evaluation or inspection agency, the agency shall be required to obtain approval from the [Administrative Agency] for the manner in which they are handled;

(b) Labels must be serially numbered;

(c) A manufacturer's compliance assurance program, submitted in accordance with Part V, Section 2 hereof, shall include requirements for issuance, possession of, attachment of and accounting for all labels to assure that labels are attached only to buildings or building components manufactured pursuant to an approved building system and inspected pursuant to an approved compliance assurance program;

(d) If the [Administrative Agency] or an inspection agency determines that the manufacturer's record of compliance is such that the [Administrative Agency] or inspection agency need not maintain an inspector in a given plant at all times, the [Administrative Agency] or inspection agency may entrust labels to the custody of one or more employees of the manufacturer, who shall be charged with controlling the use of such labels. Such employees shall not be given custody of more labels than are necessary to accommodate the manufacturer's anticipated production for one month. If the conditions of custody are violated, the [Administrative Agency] or an inspection agency shall immediately regain posession of all labels that have not been applied to the manufactured buildings or building components and shall take such further action with respect to buildings or components already labeled, and with respect to future labeling, as it may deem necessary to assure compliance with the Act and these rules and regulations.

(3) Records

Permanent records shall be kept of the handling of all labels, indicating at least how many labels have been applied to buildings or building components (or groups of components), which labels have been applied to which buildings or building components, the disposition of any damaged or rejected labels, and the location and custody of all unused labels. Such records shall be maintained by the manufacturer or by the inspection agency. A copy of such records covering attachment of each label shall be sent to the [Administrative Agency] upon request.

(4) Attachment

The [Administrative Agency] or an inspection agency shall attach labels to buildings or building components manufactured in accordance with an approved building system, and meeting the requirements of an approved compliance assurance program.

(a) Manufacturers may attach labels to manufactured buildings and building components manufactured in accordance with an approved compliance assurance program, if custody of the labels has been entrusted to them in accordance with subsection B(2)(d) of this Section.

(C) Suspension and Revocation

The [Administrative Agency], an evaluation agency, or an inspection agency may suspend or revoke, or cause to be suspended or revoked, the certification of any manufactured building or building component which the [Administrative Agency] or an inspection agency finds not to comply with the Act or these rules and regulations, or which has been manufactured pursuant to a building system or a compliance assurance program as to which approval has been suspended or revoked, or which has not been manufactured in accordance with the approved compliance assurance program. The [Administrative Agency], an evaluation agency, or an inspection agency shall remove or cause to be removed, labels from any such manufactured building or building component until it is brought into compliance with the Act and these rules and regulations. Notice of suspension or revocation of certification shall be in writing with the reasons for suspension or revocation clearly set forth therein. Appeals from such suspensions or revocations shall receive timely review.

(1) Upon suspension or revocation by the [Administrative Agency], an evaluation agency, or an inspection agency of the approval of any building system or compliance assurance program, no further labels shall be attached to any manufactured building or building component manufactured pursuant to the building system or compliance assurance program with respect to which the approval was suspended or revoked. Upon termination of such suspension or revocation, labels may again be attached to the manufactured building or building component manufactured after the date approval is reinstated. Should any building or building component have been manufactured during the period of suspension or revocation, it shall not be labeled unless the [Administrative Agency], evaluation agency or inspection agency has inspected such building or building component and is satisfied that all requirements for certification have been met.

(2) The manufacturer shall return all labels allocated for a manufactured building or building component to the issuing agency no later than thirty (30) days from the effective date of any suspension or revocation of the approval by the [Administrative Agency], evaluation agency or inspection agency, of the building system or compliance assurance program pursuant to which the manufactured building or building component is being manufactured. The manufacturer shall also return to the issuing agency all labels which it determines for any reason are no longer needed.

(D) Variations of Certified Units

Manufactured buildings or building components certified and labeled pursuant to the Act and these rules and regulations shall not be varied in any way prior to the issuance of a [certificate of occupancy] without resubmission to the [Administrative Agency] or an evaluation agency for approval of the variation and of the unit which includes the variation. The [Administrative Agency] or an inspection agency shall inspect the building or building component wherever it is located and such inspection may include such tests or destructive or nondestructive disassembly as the [Administrative Agency] or an inspection agency deems necessary to assure compliance with the Act and these rules and regulations. Local enforcement agencies may be designated as inspection agencies for such purposes.

SECTION 4: INSPECTIONS BY [ADMINISTRATIVE AGENCY] OR ITS AGENTS

The [Administrative Agency] shall make, or cause to be made, such inspections of the entire process of manufacturing, certifying, handling, storing and transporting of manufactured buildings and building components produced pursuant to approved building systems as it deems necessary.

(A) As part of the process of evaluating building systems and compliance assurance programs, the [Administrative Agency] or an evaluation agency shall inspect the manufacturing facilities in which the buildings or building components are to be manufactured.

(B) The [Administrative Agency] or an inspection agency, shall make such inspections as may be required by an approved compliance assurance program, or as may be deemed necessary by the [Administrative Agency].

(C) Prior to the issuance of a [certificate of occupancy], the [Administrative Agency] or an inspection agency shall inspect, or cause to be inspected, certified manufactured buildings or building components which it determines to have been sufficiently damaged after certification to warrant such inspection and to take such action with regard to such buildings or building components as is authorized under Section 3(C) of Part IV hereof, or as is otherwise necessary to eliminate dangerous conditions.

(1) The [Administrative Agency] shall require manufactured buildings or building components which are so damaged as no longer to comply with the Act and these rules and regulations to be brought into compliance promptly. If such buildings or building components are not brought into compliance with the Act and these rules and regulations within a reasonable time, or if they are so damaged that they cannot be brought into compliance, the [Administrative Agency] shall order that the labels be removed from such buildings or building components. Irreparably damaged buildings or building components shall be disposed of in accordance with applicable law.

(D) The [Administrative Agency] shall examine each approved inspection agency, at any reasonable time, and without prior announcement, in order to monitor the reliability of each agency and of its monitoring of each compliance assurance program. Each such examination shall investigate the adequacy of all procedures used by the agency in monitoring compliance assurance programs including inspection, tests, production methods, process controls, operator performance, materials receipt, storage and handling, workmanship standards, records and all other activities which implement the compliance assurance program in the manufacturing facility during transport, on-site, and at critical subcontractors' facilities. The results of such examinations shall be kept on file at the offices of the [Administrative Agency]. Copies of such reports shall be sent to the inspection agency. Inspection agencies shall be specifically notified of any deficiencies and of the manner in and time by which such deficiencies must be eliminated. If deemed necessary by the [Administrative Agency], an agency's approval may be suspended or revoked as provided in Part VI, Section 3 hereof.

(1) Such examinations shall also be conducted before approving an inspection agency.

(E) The [Administrative Agency] shall examine each approved evaluation agency, at any reasonable time, and without prior announcement, in order to monitor the reliability of each agency. Each such examination shall investigate the adequacy of all evaluative procedures including engineering evaluation of plans, specifications and test results, testing, and analysis of compliance assurance programs. The results of such examination shall be kept on file at the offices of the [Administrative Agency]. Copies of such reports shall be sent to the evaluation agency. Agencies shall be specifically notified of any deficiencies and of the manner in and time by which such deficiencies must be eliminated. If deemed necessary by the [Administrative Agency], approval of an evaluation agency may be suspended or revoked as provided in Part VI, Section 3 hereof.

(1) Such examinations shall also be conducted before approving an evaluation agency.

(F) No inspection entailing disassembly, damage to or destruction of certified manufactured buildings or building components shall be conducted except to implement Sections 7(d) or 11(a)(1) and (2) of the Act or Section 4(A) of Part IV hereof.

SECTION 5: LOCAL ENFORCEMENT AGENCY PROCEDURES AND INSPECTIONS

(A) Local enforcement agencies shall issue building permits for certified manufactured buildings prior to installation, and shall not withhold issuance of building permits for buildings containing certified building components which in all other respects comply with all applicable building codes, provided that any manufactured building or building component found by the [Administrative Agency] not to comply with the Act or these rules and regulations shall be brought into compliance before such permit shall be issued. An application to a local enforcement agency for a building permit shall, when requested, in addition to any other requirements, contain:

(1) A statement that the work to be performed under such permit is to include the installation of a certified manufactured building or building component in accordance with the provisions of the Act; the statement to be signed by the applicant or his agent, with the appropriate address;

(2) A true copy of the approved building system with respect to which the manufactured building or building component was manufactured or is to be manufactured, where one has not previously been furnished to that local enforcement agency; and

(3) A copy of the Building System Approval Report, where it has not previously been furnished to that local enforcement agency.

(B) Local enforcement agencies shall inspect site preparation work including foundations, not within the scope of the approval and certification, and the structural, mechanical, plumbing and electrical connections among units, for compliance with applicable law.

(C) Local enforcement agencies shall inspect all manufactured buildings or building components upon, or promptly after, installation at the building site to determine whether all instructions in the Building System Approval Report or conditions listed on the manufacturer's data plate have been followed.

This may include tests for tightness of plumbing and mechanical systems, and for malfunctions in the electrical system, and a visual inspection for obvious nonconformity with the approved building system.

(1) Destructive disassembly of certified buildings and building components shall not be performed in order to conduct such tests or inspections, nor shall there be imposed standards or test criteria different from those adopted by the [Administrative Agency] or specified in the Building System Approval Report.

(2) Non-destructive disassembly may be performed only to the extent of opening access panels and cover plates.

(D) Local enforcement agencies shall cause the disposition of noncomplying manufactured buildings and building components after consultation with the [Administrative Agency] and reasonable notice to the manufacturer or owner thereof, as the case may be, of the proposed disposition.

(E) Local enforcement agencies shall issue [certificates of occupancy] for certified manufactured buildings, and for buildings containing certified building components which otherwise comply with all applicable building codes, after they have been installed and inspected pursuant to the Act and these rules and regulations, provided that any manufactured building or building component found not to comply with the Building System Approval Report shall be brought into compliance before such [certificate of occupancy] shall be issued.

(F) When the local enforcement agency is making an inspection and finds violations, it shall report the details of the violations in writing to the [Administrative Agency]. Where violations are hazardous to occupants, a [certificate of occupancy] shall not be issued and the building shall not be occupied before such hazards are corrected. If the violations are not hazardous, a provisional [certificate of occupancy] may be issued.

SECTION 6: FEES

(A) A deposit of _____ shall be required upon application to the [Administrative Agency] to perform any of these functions.

(B) Fees charged by the [Administrative Agency] for functions performed by it shall be:

$_____ per manhour of evaluation time;
$_____ per manhour of inspection time; and
$_____ per mile of travel plus related expenses.

SECTION 7: NOTIFICATION OF CHANGES IN NAME, ADDRESS, OWNERSHIP OR LOCATION

(A) Manufacturers shall notify the [Administrative Agency] in writing within ten (10) days of any of the following occurrences:

(1) The corporate name is changed;
(2) The main address of the company is changed;
(3) There is a change in 25% or more of the ownership interest of the company within a twelve month period;
(4) The location of any manufacturing facility is changed;
(5) A new manufacturing facility is established; or
(6) There are changes in principal officers of the firm.

(B) Evaluation agencies and inspection agencies shall notify the [Administrative Agency] in writing within ten (10) days of any of the following occurrences:

(1) The company name is changed;
(2) The main address of the company is changed;
(3) There is a change in 25% or more of the ownership interest or control of the company within a twelve month period;
(4) The location of any testing facility is changed;
(5) A new testing facility is established; or
(6) There are changes in principal officers and key supervisory and responsible personnel of the firm.

SECTION 8: PROPRIETARY INFORMATION

All information relating to building systems and compliance assurance programs which the manufacturer or other party considers proprietary shall be so designated by him at the time of its submission, and shall be so held by the [Administrative Agency] and by the inspection, evaluation and local enforcement agencies, except as the [Administrative Agency] determines in each case, that disclosure is necessary to carry out the purposes of the Act.

PART V: REQUIREMENTS FOR SUBMISSION OF BUILDING SYSTEMS AND COMPLIANCE ASSURANCE PROGRAMS

SECTION 1: BUILDING SYSTEMS

Building systems shall meet the requirements set forth below to be evaluated for compliance with the standards, specifications and requirements adopted by the Building Code Council.

(A) General Requirements

(1) Building systems, including all plans, specifications and other documentation, shall be submitted in _____ copies.

(2) Building systems shall be submitted in the form prescribed by the [Administrative Agency] or [in Appendix _____ hereto] and shall be accompanied by all required fees.

(3) All documents submitted with the application shall be identified to indicate the manufacturer's name, office address and the address of the manufacturing facility.

(4) Manufacturers shall submit plans showing all elements relating to specific systems on properly identifiable sheets.

(5) Each building system application shall bear the signature and seal of an approved registered architect or professional engineer certifying that the building system complies with the codes and standards promulgated herein [if required by State law].

(6) All work to be performed on-site, including connection of all systems, equipment and appliances, shall be identified and distinguished from work to be performed in the manufacturing facility.

(7) A 3" x 4" blank rectangular space shall be provided on all sheets of plans near the title box for the [Administrative Agency's] stamp of approval.

(8) Grade, quality and identification of all materials shall be specified.

(9) Design calculations and test reports shall be submitted when required.

(10) Drawings shall be drawn to scale.

(11) Drawings shall indicate the location of the approved label and data plate.

(12) Drawings shall be dated and identified. The number of sheets in each set shall be indicated.

(B) Required Construction Details

Building systems for manufactured buildings shall provide or show, but not be limited to, the details listed below including the method of their testing or evaluation, or both. These requirements shall apply to the building systems for building components only to the extent deemed necessary by the [Administrative Agency] or by an evaluation agency to permit a proper evaluation of the building component.

(1) General

(a) Details and methods of installation of manufactured buildings or building components on foundations and/or to each other.

(b) All exterior elevations.

(c) Cross sections as necessary to identify major building components.

(d) Details of flashing, such as at openings and at penetrations through roofs and subcomponent connections. Indicate flashing material and gauge to be used.

(e) Attic access and attic ventilation.

(f) Exterior wall, roof and soffit material as well as finish.

(g) Interior wall and ceiling finish material.

(h) Fire separation walls.

(i) Sizes, locations and types of doors and windows.

(j) Recommended foundation plans, vents and underfloor access.

(2) Building Classification

(a) Occupancy or use.

(b) Area, height, and number of stories.

(c) Type of construction.

(d) Fire resistance ratings.

(3) Space and Fire Safety

(a) Detail of fire resistance rated assemblies for all stairway enclosures, doors, walls, floors, ceilings, partitions, columns, roof and shaft enclosures.

(b) Details as to width of all aisles, exits, corridors, passageways and stairway enclosures.

(c) Toxicity and flame spread classification of finished materials.

(4) Structural Detail Requirements

(a) Engineer's calculations of structural members, where appropriate.

(b) Design soil bearing value.

(c) Structural and framing details of all floors, roof and walls.

(d) Details and stress diagrams of roof trusses.

(e) Details of reinforcing steel.

(f) Complete loading schedule.

(g) Column loads and column schedule.

(h) Lintel schedule.

(i) Size, spacing and details of all structural elements.

(j) Grade or quality of all structural elements (lumber, steel, etc.)

(k) Elevation of structural elements, walls or sections thereof, providing resistance to vertical loads or lateral forces.

(l) Complete details of all structural connections.

(5) Mechanical Detail Requirements

(a) Location of all equipment and appliances. Indicate equipment and appliances listed or labeled by approved agencies.

(b) Heat loss calculations, where appropriate.

(c) Manufacturer's name, make, model, number, BTU, and input rating of all equipment and appliances, as appropriate, or the equal thereof.

(d) Duct and register locations, sizes, and materials.

(e) Clearances from combustible material or surfaces for all ducts, flues, and chimneys.

(f) Method of providing required combustion air and return air.

(g) Location of flues, vents and chimneys and clearances from air intakes and other vents and flues.

(h) Details regarding dampers in ducts penetrating fire separations.

(i) Complete drawings of fire sprinkler systems, standpipe system or fire alarm system, if required.

(j) Detail of elevator or escalator system, including method of emergency operation.

(6) Plumbing Detail Requirements

(a) Plan or schematic drawing of the plumbing layout including but not limited to, size of piping, fitting, traps and vents, cleanouts and valves, gas, water, and drainage system.

(b) Plumbing materials, and location of all equipment and appliances to be used. Indicate fixture unit capacity of system(s) and the make, model and rating/capacity of equipment and appliances. Indicate equipment and appliances listed or labeled by approved agencies.

(c) Make and model of safety controls (such as for water heaters), their location, and whether listed or labeled by approved agencies.

(d) How piping is to be supported and intervals of support.

(e) Location of vents above roofs and required clearances, including but not limited to clearances from air intakes, other vents and flues.

(f) Methods of testing.

(7) Electrical Detail Requirements

(a) Plan of service equipment, including service entrance, conductors, service raceway and clearances above ground and above structures.

(b) Method and detail for grounding service equipment.

(c) Single line diagram of the entire electrical installation.

(d) Load calculations for service and feeders.

(e) Sizes of all feeders and branch circuits.

(f) Size, rating and location of main disconnect/overcurrent protective devices.

(g) Method of interconnection between manufactured buildings or building components and location of connections.

(h) Location of all outlets and junction boxes.

(i) Method of mounting fixtures and wiring installations.

SECTION 2: COMPLIANCE ASSURANCE PROGRAMS

Compliance assurance programs shall be approved if they meet the requirements set forth in this Section. It is the manufacturer's responsibility to execute every aspect of this program. The manufacturer shall continue to be responsible for all corrective actions required, and if the [Administrative Agency] delegates its inspection duties, the contractual relationship between the manufacturer and the inspection agency shall not diminish such responsibility. The manufacturer shall cooperate with the inspection agency by providing the inspection agency with all necessary reports, information, documents, records, facilities, equipment, samples and other assistance for assuring compliance.

The manufacturer's compliance assurance program shall be submitted in the form of a compliance assurance manual which shall contain complete documentation of all the compliance assurance activities of both the manufacturer and the inspection agency. The manual shall be comprehensively indexed, and shall treat the material listed here in detail.

(A) Organization Requirements

(1) A procedure for periodic revision of the manual.

(2) An organizational structure for implementing and maintaining the compliance assurance program and its functional relationship to other elements of the organization structure of the manufacturer, which structure shall provide for independence from the production department .

(a) Company officers and employees in charge of the compliance assurance program must be identified, and their training and qualifications specified.

(3) A uniform system of audit (in-depth analysis of program effectiveness and means to identify deficiencies) to monitor program performance periodically.

(4) Complete and reliable records of manufacturing and site operations, if any (suitable means of storage, preservation and accessibility of copies of forms to be utilized shall be included.)

(5) A system to control changes in production or inspection procedures.

(6) A system to assure that working drawings and specifications, working instructions and standards, procurement documents, etc., conform to the approved building system.

(7) A serial numbering system for buildings or building components.

(8) The method of safekeeping, handling and attaching labels and identification of those employees responsible therefor.

(B) Materials Control

(1) Procedures to assure effective control over procurement sources to ensure that materials, supplies and other items used in production and site operations, if any, conform to the approved plans, specifications and quality requirements.

(2) Procedures for inspection of materials, supplies and other items at the point of receipt.

(3) Method of protection of materials, supplies and other items against deterioration prior to their incorporation in the certified buildings or building component.

(4) Provision for disposal of rejected materials, supplies and other items.

(C) Production Control

(1) Procedures for timely remedial and preventive measures to assure product quality.

(2) Provision, maintenance and use of testing and inspection equipment to assure compliance with the approved building system.

(3) Provision for frequency of sampling inspections.

(4) Provision of necessary authority to reject defective work and carry out compliance assurance functions, notwithstanding any conflict with production department goals and needs.

(5) A schematic of the manufacturing operation showing the location of inspection stations, and "hold" points for mandatory inspection characteristics.

(6) Inspection and test procedures, including accept/reject criteria and mandatory inspection characteristics.

(7) Standards of workmanship.

(8) Provision for disposal of rejects.

(D) Finished Product Control

(1) Procedure for final inspection of all manufactured buildings or building components before shipment to the site or storage point, including identification and labeling.

(2) Procedures for handling and storing all finished manufactured buildings or building components, both at the manufacturing plant or other storage point and after delivery to the building site.

(3) Procedures for packing, packaging and shipping operations and related inspections.

(4) Procedures for transportation, including all measures to protect against damage while in transit, and setting forth the modes of transportation to be utilized and the carrying equipment and procedures.

(E) Installation Control

(1) Installation procedures including component placement, equipment and procedures, field erection and finishing work, utility connection instructions and all appropriate on-site inspection criteria and test descriptions.

(2) Organizational provisions for field repair and disposal of rejects.

(F) Permission for Inspection

The manufacturer shall provide the [Administrative Agency] with written permission, signed and notarized, for the [Administrative Agency] to inspect his manufacturing facilities, his products, and building sites under his control at any reasonable time without prior announcement.

(G) Inspections by the [Administrative Agency]

The Compliance Assurance Manual shall contain detailed plans for inspections by the [Administrative Agency] or inspection agency.

PART VI: APPROVAL OF INSPECTION AND EVALUATION AGENCIES

SECTION 1: REQUIREMENTS FOR SUBMISSION

An inspection or evaluation agency seeking approval shall submit an application to the [Administrative Agency] which shall include the items listed in this Section.

(A) The original Articles of Incorporation of the agency and all subsequent amendments thereto, as filed in the State of incorporation.

(B) The bylaws of the organization, if any.

(C) The names, addresses and business affiliations of all members of the Board of Directors and of top management personnel.

(D) Stock owned in amounts over $5,000 reflecting the financial interests of the agency's Board of Directors and top management personnel (if requested by the [Administrative Agency]).

(E) Certification by the agency that:

(1) Its board of directors, as a body, and its technical personnel, as individuals, can exercise independence of judgment; and,

(2) Its activities pursuant hereto will result in no financial benefit to the agency via stock ownership, or other financial interests in any producer, supplier or vendor of products involved, other than through standard published fees for services rendered.

(F) Names, years of experience, State in which professionally registered and other qualifications of the directors of inspection or evaluation programs.

(G) Names and years of experience of employees practicing in the following disciplines: architecture, structural engineering, mechanical engineering, electrical engineering, fire protection and other branches of engineering; the States in which each is registered and the services each performs.

(H) An organization chart showing management and supervisory persons including the number of graduate engineers and architects, and the names of all

consulting engineers or architects, designating which are full-time and which are part-time engineers.

(I) Number and location of factory inspectors, supervisors, and other technicians, including evaluators of factory inspectors and the qualifications of each specialized group, including records of work experience, licenses held and other pertinent qualifications; descriptions of the type of work each group and each technician is expected to perform, and the qualifications of each group and each technician to perform the work assigned.

(J) An outline of the training program, if any, of the agency to assure that all inspectors, evaluators and other technicians are properly trained to do each job assigned to them.

(K) An outline of the general procedures for supervision of inspectors and evaluators, including checking and evaluation of their work.

(L) All engineers, technicians and other personnel who will perform services for the organization but who are not employees of the organization, and the supervisory and other relationships which each will have to the agency.

(M) Type of products, components, equipment, structures and other items which the organization has evaluated, tested, or inspected, and the number of years of experience the organization has had with each, and the type of codes, standards, specifications and requirements with respect to which the organization has had experience in providing evaluation, inspection or testing services, and the number of years of experience with each.

(N) Description of the record-keeping system the agency proposes to use with particular regard to availability of records to the [Administrative Agency] and the capacity to render reports to the [Administrative Agency].

(O) Description of the frequency with which the agency is capable of performing inspections or evaluations.

(P) List of the States in which the agency is now approved to inspect or evaluate manufactured buildings or building components, and a further listing of those States in which the agency intends to seek such approval within the next two (2) years.

(Q) Certification that the agency is able to evaluate building systems for compliance with the codes, standards, specifications and requirements adopted herein, or manufactured buildings or building components for compliance with approved building systems.

SECTION 2: PROCEDURES FOR APPROVING AND DELEGATING

(A) The [Administrative Agency] may approve inspection or evaluation agencies which meet the requirements of Section 1 of this Part and which the [Administrative Agency] finds otherwise qualified to perform the functions proposed to be delegated to them.

(B) Prior to a full evaluation of an application for approval, the [Administrative Agency] shall determine whether such application is suitable for processing. In the event the application is found to be unsuitable for

processing, the applicant shall be notified in writing of such unsuitability and the basis thereof within thirty (30) days of the date the application is received by the [Administrative Agency]. In such event, all but $25.00 of the fee will be returned, and the findings of unsuitability shall be without prejudice. Any subsequent submission shall be treated as a new application.

(C) In the event an inspection or evaluation agency is not approved, the [Administrative Agency] shall return one complete application to the applicant with a written explanation of the reasons for such disapproval attached thereto.

(D) Approval of inspection or evaluation agencies shall be evidenced by a letter to the applicant indicating such approval and stating specifically the functions which the applicant has been approved to perform. Such approval shall not constitute the actual delegation of such functions.

SECTION 3: SUSPENSION AND REVOCATION

(A) Grounds

The [Administrative Agency] may suspend or revoke its approval of any evaluation agency or inspection agency if the approval was issued in error, was issued on the basis of incorrect information, or was issued in violation of the Act or these rules and regulations, or if the agency violates the Act or these rules and regulations, if examination pursuant to Part IV, Sections 4 (D) and (E) hereof disclose that the agency has failed to perform properly, or for such other cause as may be deemed sufficient by the [Administrative Agency] to warrant such action. Appeals from suspensions or revocations shall receive timely review.

(B) Procedures in Event of Suspension or Revocation

(1) General

If the [Administrative Agency] suspends or revokes the approval of an evaluation or inspection agency, the evaluation or inspection agency shall be given notice in writing of the suspension or revocation with the reasons therefor set forth therein. Manufacturers being evaluated or inspected by such agencies, and all local enforcement agencies within this State shall also be notified in writing of such suspensions or revocations. Such notices shall contain instructions to the manufacturer and to the local enforcement agency as to manufactured buildings or building components previously certified by an agency whose approval has been suspended or revoked.

(2) Records

An evaluation or inspection agency whose approval has been suspended or revoked shall within (90) days of the suspension or revocation deliver to the custody of the [Administrative Agency] the originals of all records required by the Act and these rules and regulations to be made of, or in the course of, the agency's operations pursuant to the Act and these rules and regulations.

(3) Labels

An evaluation or inspection agency for which approval has been suspended or

revoked shall, within ninety (90) days of the suspension or revocation, deliver to the custody of the [Administrative Agency] all labels in the agency's possession, under its control, or for which it is responsible pursuant to the Act and these rules and regulations.

PART VII: RECIPROCITY

If the [Administrative Agency] finds that the standards for the manufacture and inspection of manufactured buildings or building components prescribed by statute or rules and regulations of another State, or other governmental agency, meet the objectives of the Act and these rules and regulations, and are enforced satisfactorily by such other State, or other governmental agency, or by their agents, the [Administrative Agency] shall accept manufactured buildings or building components which have been certified by such other State or governmental agency, and shall assure that the appropriate label is attached thereto. The standards of another State or governmental agency shall not be deemed to be adequately enforced unless such other State or governmental agency provides for notification to the [Administrative Agency] of suspensions or revocations of approvals issued by that other State or governmental agency in a manner satisfactory to the [Administrative Agency], and so notifies the [Administrative Agency].

SECTION 1: PROCEDURES FOR GRANTING OR REFUSING RECIPROCITY TO ANOTHER JURISDICTION

(A) The [Administrative Agency] may evaluate the statute, rules and regulations of another State or governmental agency at any time.

(B) If the [Administrative Agency] finds that the standards prescribed by the statute or rules and regulations of another state or other governmental agency meet the objectives of this Act, and that these rules and regulations are satisfactorily enforced, it shall extend reciprocity to that jurisdiction by:

(1) Giving notice to any requesting manufacturer;
(2) Giving notice to the [Administrative Agency] of the other jurisdiction;
(3) Publishing a notice of the grant of reciprocity in _____;
(4) Giving notice to all local enforcement agencies in this State.

(C) If the standards of the other state or governmental agency do not meet the objectives of this Act, or are inadequately enforced, or both, reciprocity shall not be extended. In that event, the Agency shall notify any requesting manufacturer and the [Administrative Agency] of the other state of the refusal and the reasons therefor.

SECTION 2: PROCEDURES FOR RECIPROCALLY CERTIFYING MANUFACTURED BUILDINGS OR BUILDING COMPONENTS

A manufacturer from a jurisdiction to which reciprocity has been extended shall submit to the [Administrative Agency] evidence that his building system and compliance assurance program have been approved by such state or governmental agency. The [Administrative Agency] shall verify the approval and shall notify the manufacturer in writing of such verification and that

properly labeled buildings or building components of his manufacture will be accepted.

SECTION 3: SUSPENSION AND REVOCATION

The [Administrative Agency] shall suspend or revoke, or cause to be suspended or revoked, its acceptance or certification or both of such reciprocally certified manufactured building or building component if it determines that the standards for the manufacture and inspection of such manufactured buildings or building components of such other State or other governmental agency do not meet the objectives of the Act and these rules and regulations, or that such standards are not being enforced to the satisfaction of the [Administrative Agency]. If such other State or governmental agency or its agents should suspend or revoke its approval and certification, the acceptance or certification or both granted under this Part shall be revoked or suspended accordingly. Notice to the manufacturer and to the [Administrative Agency] of such other State of such suspension or revocation shall be in writing with the reasons for such suspension or revocation set forth therein. Appeals from such suspensions or revocations shall receive timely review.

PART VIII: APPEALS

SECTION 1: APPLICATIONS FOR APPEAL

(A) Who May File

Any person or party in an individual capacity or on behalf of a class of persons or parties affected by any rule or regulation or by any decision of or action by any evaluation agency, inspection agency or the [Administrative Agency] may file an application for appeal.

(B) Time of Filing

An application for appeal shall be filed within ninety (90) days after the date of the promulgation of the rule or regulation, or the date of the decision or action from which the appeal is being taken.

(C) Filing

An application may be filed either personally or by mail at the principal office of the Building Code Council.

(D) Form of Application

The application need not follow any prescribed form, but shall be in writing and shall contain sufficient information, as set forth in subsection (E) hereof, to apprise the Council of the rule and regulation appealed from, or of the facts and circumstances surrounding the decision or action appealed from and giving the grounds upon which the appeal is based.

(E) Contents of Application to Building Code Council

The application shall include, where applicable, the following documentation:

(1) A copy of the rule, regulation, initial determination, decision, direction, ruling or order which is the subject of the appeal;

(2) A copy of the building system, compliance assurance program or other document involved;

(3) A description of the manufactured building or building component affected;

(4) A statement of the relief sought by the appellant;

(5) In the event of an appeal from an action or decision of an inspection or evaluation agency, the application shall contain a statement of the prior decision or other action of the [Administrative Agency] on such appeal.

SECTION 2: HEARINGS AND HEARING NOTICES

The Building Code Council shall promptly hear all appeals. Except in unusual circumstances, a hearing on an appeal shall be held no sooner than ten (10) days after the mailing by the Building Code Council of a notice of such hearing to all interested parties. Such notice shall state the legal authority for, and the nature of the hearing, and the time, date and place thereof.

SECTION 3: CONDUCT OF HEARINGS

All hearings shall comply with this section.

(A) Appearances. Any interested person may appear and be heard.

(B) Adjournment. The Building Code Council may, on its own motion, or on the motion of any person, adjourn a hearing to such time and place as the Building Code Council may determine.

(C) Quorum. At least three members of the Building Code Council shall be present at all times during a hearing.

(D) Witnesses. A person may produce such witnesses as he deems appropriate.

(E) Evidence. The Building Code Council shall not be bound by common law or statutory rules of evidence in the conduct of the hearing. The Building Code Council shall consider in evidence any testimony, documents or other materials submitted by the appellant or the appellee including the results of formal or informal appeals before national codes and standards organizations or national codes and standards appeals organizations.

(F) Procedures. All parties shall be afforded an opportunity to state their positions, either by the testimony of witnesses or by a formal or informal statement by themselves, their attorneys, or any other persons. At the conclusion of the parties' statements, the Building Code Council may question the appellant or appellee or any witness and any other party who so desires shall be heard.

(G) Official Reporter All hearings shall be reported by an official reporter. The official transcript shall be open for inspection at the offices of the Building Code Council. Copies of transcripts shall be available from the official reporter on payment of the charges therefor.

SECTION 4: DECISIONS

All final decisions of the Building Code Council shall be in writing, shall be rendered within thirty days of the close of the hearings and shall state the reasons therefor. One copy of the final decision shall immediately be transmitted by mail to the appellant and one copy to the appellee. Final decisions shall be permanently filed in the office of the Building Code Council.

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16. ABSTRACT *(A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.)*

To assist the states in developing their building regulatory activities and functions, the Coordinated Evaluation System (CES) Project has defined and developed model informational documentation pertaining to the functional areas of (1) data submission, (2) evaluation, (3) approval, (4) compliance assurance, and (5) installation data.

This report gives the results of the project's investigations and presents sample model documents pertaining to manufactured buildings and building components. The model documentation is based on the Model Rules and Regulations for manufactured buildings developed by a Department of Commerce sponsored working task group, and the results of a comprehensive state-of-the-art study of most state building regulatory programs. The documentation presented covers all functional areas except owner information which is not usually subject to regulation. Emphasis was placed on developing documentation applicable primarily to one and two family detached dwellings.

17. KEY WORDS *(six to twelve entries; alphabetical order; capitalize only the first letter of the first key word unless a proper name; separated by semicolons)*

Building codes; certification; compliance assurance; evaluation; inspection; manufactured building; model documents; NCSBCS; standards; state regulation.

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